MASTER ENVIRONMENTAL LIBRARY (MEL)

Software User Manual

July 10, 1997

Defense Modeling and Simulation Office
Alexandria, VA

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SOFTWARE USER MANUAL

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APPROVAL:

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DIRECTOR,
DEFENSE MODELING AND SIMULATION OFFICE

FOREWORD

The Defense Modeling and Simulation Office (DMSO) was established to serve as the executive secretariat for the Executive Council on Modeling and Simulation (EXCIMS) and to provide a full-time focal point for information concerning Department of Defense (DoD) Modeling and Simulation (M&S) activities. The DMSO promulgates M&S policy, initiatives, and guidance to promote cooperation among DoD components to maximize efficiency and effectiveness. The DMSO is a staff activity reporting to the Director, Defense Research and Engineering (DDR&E), office of the Undersecretary of Defense for Acquisition and Technology (USD(A&T)).

This document will be reviewed and updated by the DMSO as required to maintain currency. Comments and recommendations should be forwarded for review and consideration for inclusion to:

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SECTION 1. SCOPE

1.1 IDENTIFICATION

This Software User Manual (SUM) pertains to Version 1.1 of the MEL[1] Resource Site Software (MRSS) and Version 1.1 of the MEL Access Site Software (MASS). This document is intended for distribution to those organizations associated with the discovery and retrieval of environmental data using the MEL system.

1.2 SYSTEM OVERVIEW

The MEL is an Internet-based data discovery and retrieval system that provides access to geographically distributed oceanographic, meteorological, terrain, and near-space databases. The MEL is based on a library paradigm in which users query a distributed "card catalog" through a MEL Access Site. The "cards" in the "card catalog" serve as the common denominator among different types of data in the library. These consist of metadata records that comply with the United States Federal Geographic Data Committee (FGDC) content standards for digital geospatial metadata. When the user locates a "card" that provides the location of desired data, the user can "go to the shelf and get the book" by submitting an order for the data to the appropriate MEL Resource Site(s).

The MEL Access Site consists of an Internet HTTP[2] Server (also referred to as the Web server) providing access to Hypertext Markup Language (HTML) and JAVA™ interfaces as well as supporting Common Gateway Interface (CGI) programs. MEL users search for and order available data using a World Wide Web (WWW) browser client application on their computer. They may choose either the HTML or Java interface on the MEL Home page to interactively create a Query and then an Order for data. Such Queries and Orders can include a region of interest, time range, category keywords, and data center elements. The Query checks all metadata records for specified Resource Sites. Query results are displayed for the user to examine the full text of the metadata record, view browse graphics associated with the metadata record, and generate an order form[3] customized for the chosen dataset. The JAVA Query provides an interactive interface that allows information to be visually compared, thus guiding users through a potentially large set of resulting data that meet the user's query criteria to the specific datasets of interest. Users can order existing datasets, or where applicable, subscribe to receive datasets as they are produced.

[1] Master Environmental Library.
[2] Hypertext Transfer Protocol
[3] Some Resource Sites do not use the MEL order form. In these cases the data is ordered directly from the Resource Site using their local ordering procedures.

Orders for data are sent to the respective MEL Resource Site by electronic mail (e-mail) and processed by the MRSS. This customizable software parses the e-mail orders, provides access control, handles scheduling of requests, extracts data from the local databases, formats, compresses, encrypts (if necessary) and delivers the data files, and finally notifies the user by e-mail of the order delivery.

The MEL project is sponsored by the Defense Modeling and Simulation Office (DMSO), under the direction of DMSO Executive Agents (EA) for air and space, oceans, and terrain. The MEL Project Manager is Dr. Richard Siquig of the Naval Research Laboratory (NRL), Monterey.

1.3 DOCUMENT OVERVIEW

This document provides guidance and instructions on using the MEL system for environmental data discovery and retrieval.

SECTION 2. REFERENCED DOCUMENTS

2.1 GOVERNMENT DOCUMENTS

2.1.1 STANDARDS

a. MIL-STD-498, **Software Development and Documentation**, 5 Dec 94.

b. United States. Federal Geographic Data Committee. **Content Standards for Digital Geospatial Metadata**, Washington, DC: FGDC, 8 Jun 94.

2.1.2 OTHER PUBLICATIONS

a. United States. DMSO. **MEL Software Requirements Specification**, Alexandria, VA: DMSO, June 97.

b. United States. DMSO. **MEL Software Version Description, MRSS Version 1.1**, Alexandria, VA: DMSO, 15 May 97.

2.2 NON-GOVERNMENT DOCUMENTS

None

SECTION 3. SOFTWARE SUMMARY

3.1 SOFTWARE APPLICATION

The MEL is an Internet-based data discovery and retrieval system that provides access to geographically distributed oceanographic, meteorological, terrain, and near-space databases. The MEL Home page provides access to the data discovery and retrieval functions, MEL system and project information, and e-mail access for technical questions, suggestions, and problems.

3.2 SOFTWARE INVENTORY

MEL users must have an HTML 3.2-compliant Web Browser application.

The use of Pretty Good™ Privacy (PGP) data encryption software is strongly recommended. Optional software items include standard decompression applications such as gunzip or untar, and decoders for data formats like the Gridded Binary (GRIB) and Binary Universal Form for Representation (BUFR) of meteorological data.

If the preferred method of receiving ordered datasets is File Transfer Protocol (FTP) delivery, MEL users must have access to an anonymous FTP server.

3.3 SOFTWARE ENVIRONMENT

MEL users must have Internet connectivity and reliable data throughput for optimum use of the MEL.

3.4 SOFTWARE ORGANIZATION AND OVERVIEW OF OPERATION

The purpose of the MASS is to provide a uniform interface to users for data discovery and retrieval from distributed data sites.

The MASS comprises five functional areas:

- HTML Query
- JAVA Query
- Order-Subscription Status
- Metadata Validation Service
- Administrative Tool

The MASS also functions as the user interface for the MEL system. For the HTML Query and Order-Subscription Status functions, a series of CGI programs written in the Perl language generate interactive HTML pages on-the-fly. The JAVA Query function uses Java applets to generate a highly-interactive graphical interface, incorporating data visualization as a comparative tool. The Metadata Validation Service and Administrative Tool functions are used by MEL Resource Site Administrators and do not concern general MEL users. A diagram of the HTML Query process is shown in Figure 1.

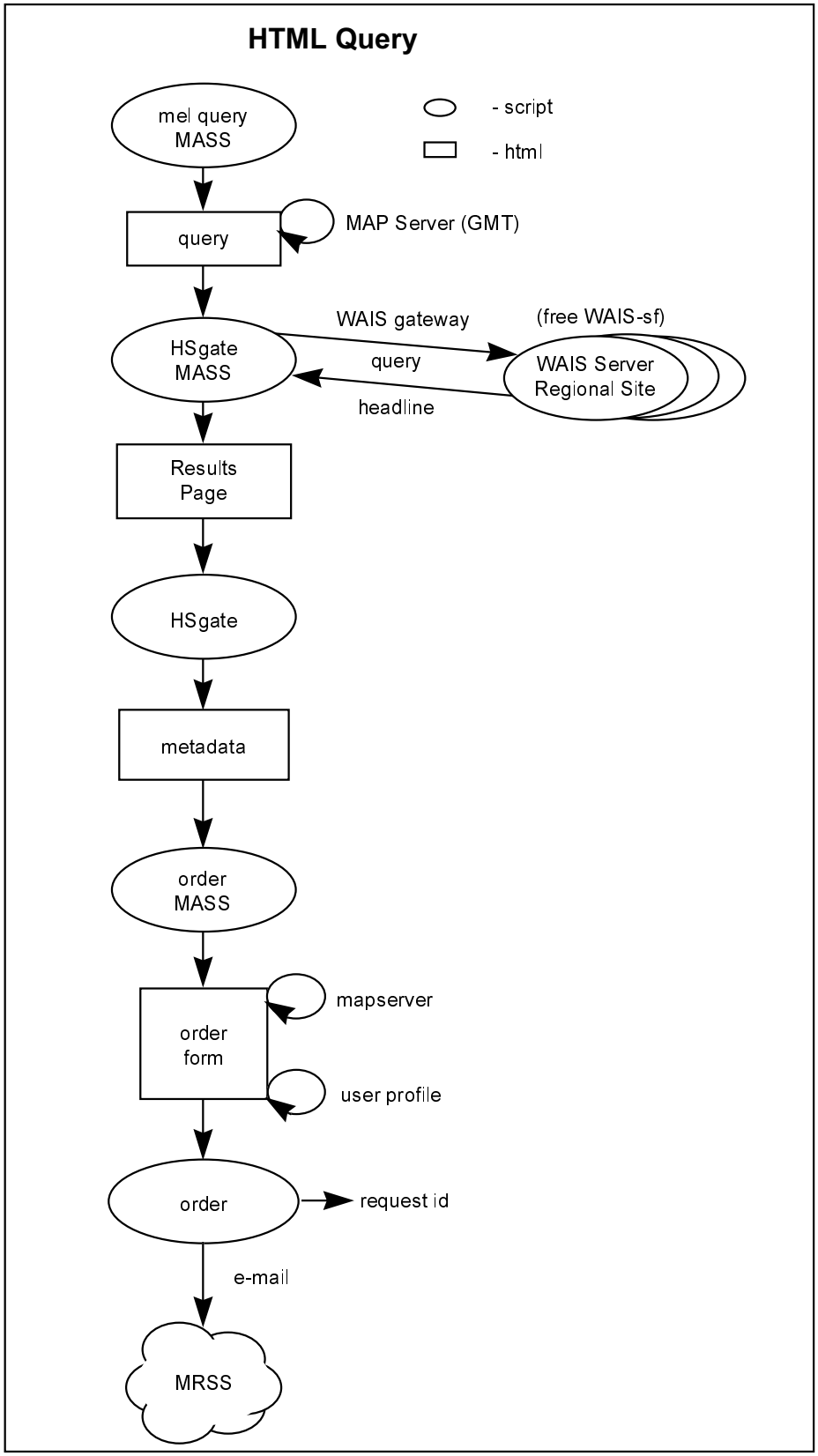


Figure 1. HTML Query Process

A diagram of the Order-Subscription Status process is shown in Figure 2.

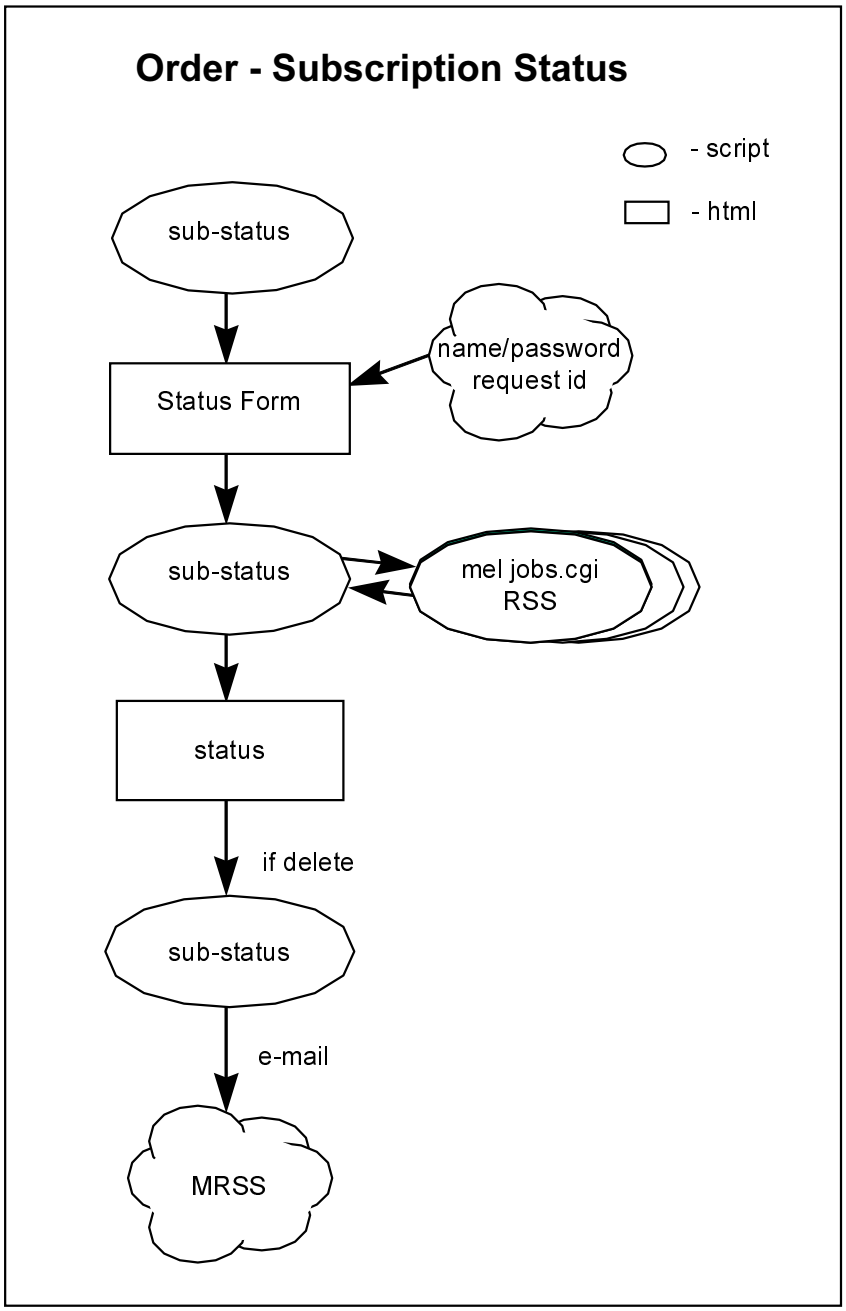


Figure 2. Order-Subscription Status Process

The MASS is a scaleable application that can support sites with various configurations. The MASS can work from behind firewalls with controlled risk, using e-mail to send a user's data request to the Resource Sites. If necessary, the user's e-mail request and retrieved data files can be encrypted for privacy while being sent over the Internet. Wherever possible, the MASS uses Commercial Off The Shelf (COTS) software, open systems technology, and proven public domain support software.

NOTE: What is a *request*?

The special term *request*, as used in this document, refers to a single instance of an order for a single dataset ordered by the user. It is also assigned a unique *request_id* that is used extensively by the MASS. Using the *request_id* the user can track the progress of the *request*, and Site Administrators can monitor and troubleshoot the software.

E-mail *requests* are formatted in a custom text format similar to Standardized General Markup Language (SGML) and processed as follows: The MEL Access Site sends a formatted and, optionally, encrypted user *request* via e-mail to the Resource Site. The MRSS then decrypts, parses, and optionally, checks for authorized access to the requested dataset or information. If the MRSS determines the *request* is legitimate, it is processed and the extracted data or the generated product is sent to the user via FTP or e-mail, as appropriate.

Several *requests* may be processed concurrently by the MASS. The number of concurrent requests and the number of processes are site configurable, based on available system resources.

3.5 CONTINGENCIES/ALTERNATE STATES/MODES OF OPERATION

3.5.1 RESOURCE SITE NOT RESPONDING

If a particular Resource Site is not responding or is off-line, redundant or similar data can be found by altering the HTML or JAVA Query to search *All* remaining Resource Sites.

3.5.2 MEL ACCESS SITE IS NOT RESPONDING

If the MEL Access Site is not responding or is off-line, datasets can still be ordered from Level 1-compliant Resource Sites. These sites use their own ordering methodology and operate independently from MEL. Direct access to the Level 1-compliant Resource Sites is provided by the WWW.

3.6 SECURITY AND PRIVACY

3.6.1 U.S. GOVERNMENT SYSTEM

The MEL and related equipment are intended for the communication, transmission, processing and storage of U.S. Government information. These systems and equipment are subject to monitoring to ensure proper functioning, to protect against improper or unauthorized use or access, and to verify their presence or performance of applicable security features or procedures, and for other like purposes. Such monitoring may result in the acquisition, recording and analysis of all data being communicated, transmitted, processed or stored in this system by a user. If monitoring reveals evidence of possible criminal activity, such evidence may be provided to law enforcement personnel. Use of the MEL system constitutes consent to such monitoring. The Disclaimer page, available by a hyperlink on the MEL Home page, describes the security and monitoring agreements to which each MEL user is subject.

3.6.2 LIMITS OF LIABILITY

With respect to the documents available from the MEL server, neither the U.S. Government, nor the Defense Modeling and Simulation Office, nor the U.S. Navy, nor the Naval Research Laboratory, nor any of their employees, makes any warranty, express or implied, including the warranties of merchantability and fitness for a particular purpose, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

3.6.3 LIMITS OF ENDORSEMENT

Reference within the MEL Home page to any specific commercial products, process, or service by trade name, trademark, manufacture, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the U.S. Government, the Defense Modeling and Simulation Office, the U.S. Navy, or the Naval Research Laboratory. The views and opinions of authors expressed on the MEL Home page do not necessarily state or reflect those of the U.S. Government, the Defense Modeling and Simulation Office, or the U.S. Navy and shall not be used for advertising or product endorsement purposes.

3.6.4 PRIVACY

As previously mentioned, the PGP software is strongly recommended for data privacy. To take advantage of PGP encryption/decryption features, users must submit their public key in the User Profile.

3.7 ASSISTANCE AND PROBLEM REPORTING

3.7.1 ASSISTANCE

As discussed elsewhere in this document, the MEL provides users with e-mail access for technical questions, suggestions, and problems. E-mail hyperlinks are generally available at the bottom of each MEL Web page. Any MEL related questions may be addressed in an e-mail containing a complete description of the problem and symptoms to the following address:

mel_support@nrlmry.navy.mil

3.7.2 PROBLEM REPORTING

Technical problems with the MEL may be addressed by sending e-mail to the following addresses:

- General comments or feature enhancements —

  mel_comments@nrlmry.navy.mil

- Malfunctions (bugs) in the MEL program —

  mel_bugs@nrlmry.navy.mil

SECTION 4. ACCESS TO THE SOFTWARE

This section contains step-by-step procedures oriented to first-time or occasional users of MEL. Sufficient details are provided so that such users can reliably access the MEL before learning all the nuances of its functionality.

4.1 FIRST-TIME USERS OF THE SOFTWARE

4.1.1 EQUIPMENT FAMILIARIZATION

Not Applicable

4.1.2 ACCESS CONTROL

4.1.2.1 CREATING A PASSWORD

The MEL Home page and Query forms are available to all Internet users. Passwords are needed only to order datasets. MEL users provide information to create a User Profile at the time of their intitial MEL order (see paragraph 5.3.6.3.1). The User ID is the user's e-mail address. The password is user selected and can contain as many characters as needed provided the password is a single word with no breaks.

4.1.2.2 CHANGING A PASSWORD

Once a User Profile has been created the MEL user can change any of the parameters by changing the contents of the User Profile form.

If a Password is forgotten, contact the MEL Access Site Administrator at the following e-mail address and provide a telephone contact number:

`mel_access_admin@nrlmry.navy.mil`

4.1.3 INSTALLATION AND SETUP

There are no special procedures for a MEL user to be identified or authorized to access the MEL other than the creation of a User Profile as described in paragraph 5.3.6.3.1.3.

4.2 BEGINNING A SESSION

Once the user has established connectivity with the Internet, the MEL can be accessed at:

`http://www-mel.nrlmry.navy.mil`

Figure 3 depicts the MEL Home Page, which provides the launch-point for hyperlinking to other MEL pages. The central bordered table contains five primary hyperlinks, the following three of which control access to MEL data:

- HTML Query - An HTML form for submitting a text-based metadata query.
- JAVA Query - A Java form for submitting a graphics-based metadata query.
- Check/Cancel Orders - A password-restricted form that lets users check the status of pending orders or subscriptions and/or cancel outstanding orders or subscriptions.

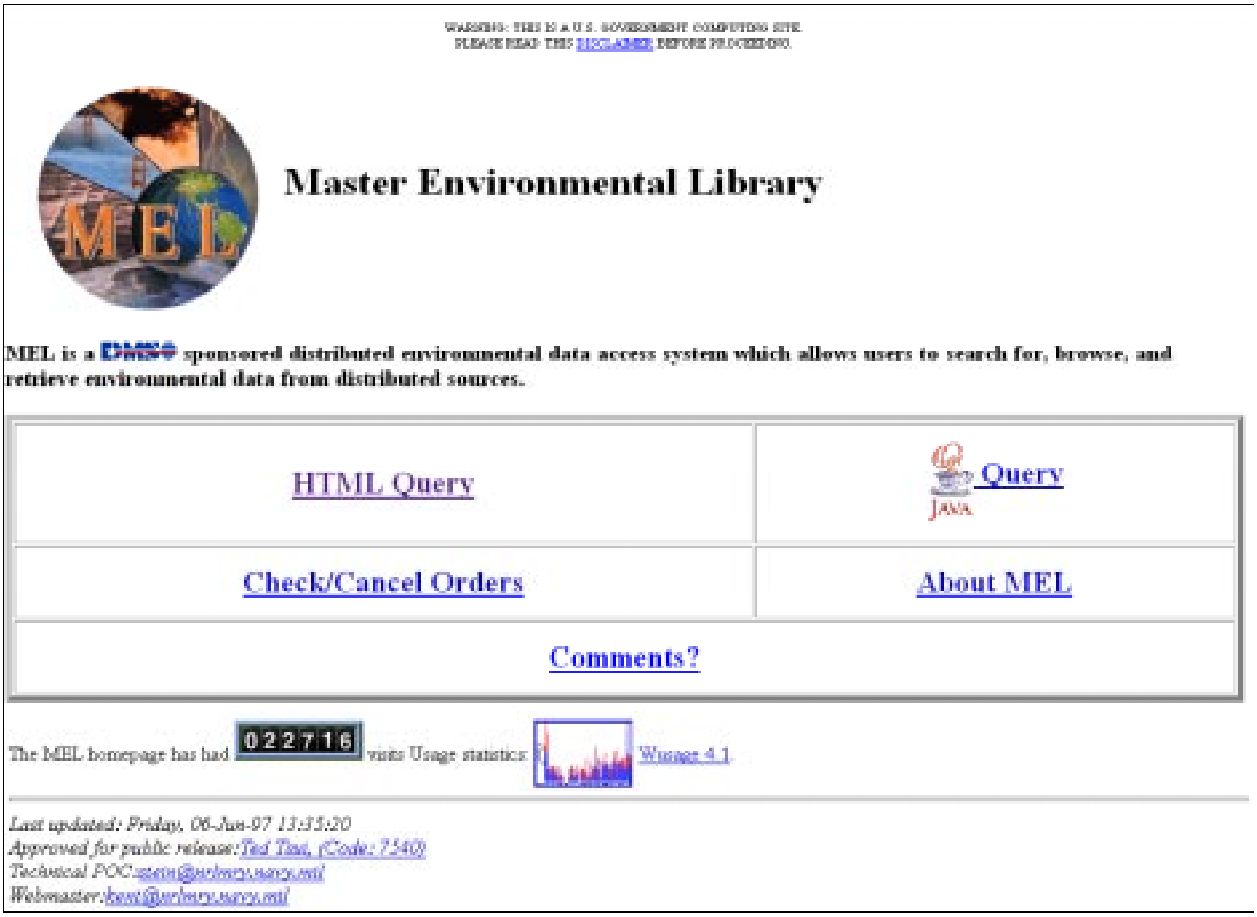


Figure 3. MEL Home Page

The following two primary hyperlinks provide additional information about MEL and procedures for submitting user comments:

- About MEL - A short description of MEL with hyperlinks to additional system documentation and information.
- Comments? - An e-mail form for providing user feedback to the MEL Access Site Administrator.

The MEL Home Page also contains the following secondary hyperlinks that provide users access to:

- The Disclaimer page
- The DMSO Home page
- The MEL Home page usage statistics
- E-mail forms to key MEL personnel

4.3 STOPPING AND SUSPENDING WORK

Any MEL work can be stopped at any time by linking to another Universal Resource Locater (URL) in the Web browser or by closing the Web browser program.

SECTION 5. PROCESSING REFERENCE GUIDE

5.1 CAPABILITIES

The MEL uses a Web browser to create interactive forms to let users discover and retrieve environmental datasets. An HTML Query interface is provided for quick searches and ordering, while a JAVA Query interface provides a highly interactive form for developing more complex and selective queries.

5.2 CONVENTIONS

MEL does not have any unique conventions used by the software, such as the use of colors in the displays, audible alarms, or rules for assigning names and codes. It does use the vocabulary associated with environmental data and general geospatial terms.

5.3 HTML QUERY PROCESSING PROCEDURES

This section describes procedures for using the MEL. The information is presented in the same sequence as discussed in paragraph 4.2 of this Manual.

Figure 4 depicts the HTML Query Page, which lets users specify the parameters of the desired environmental data.

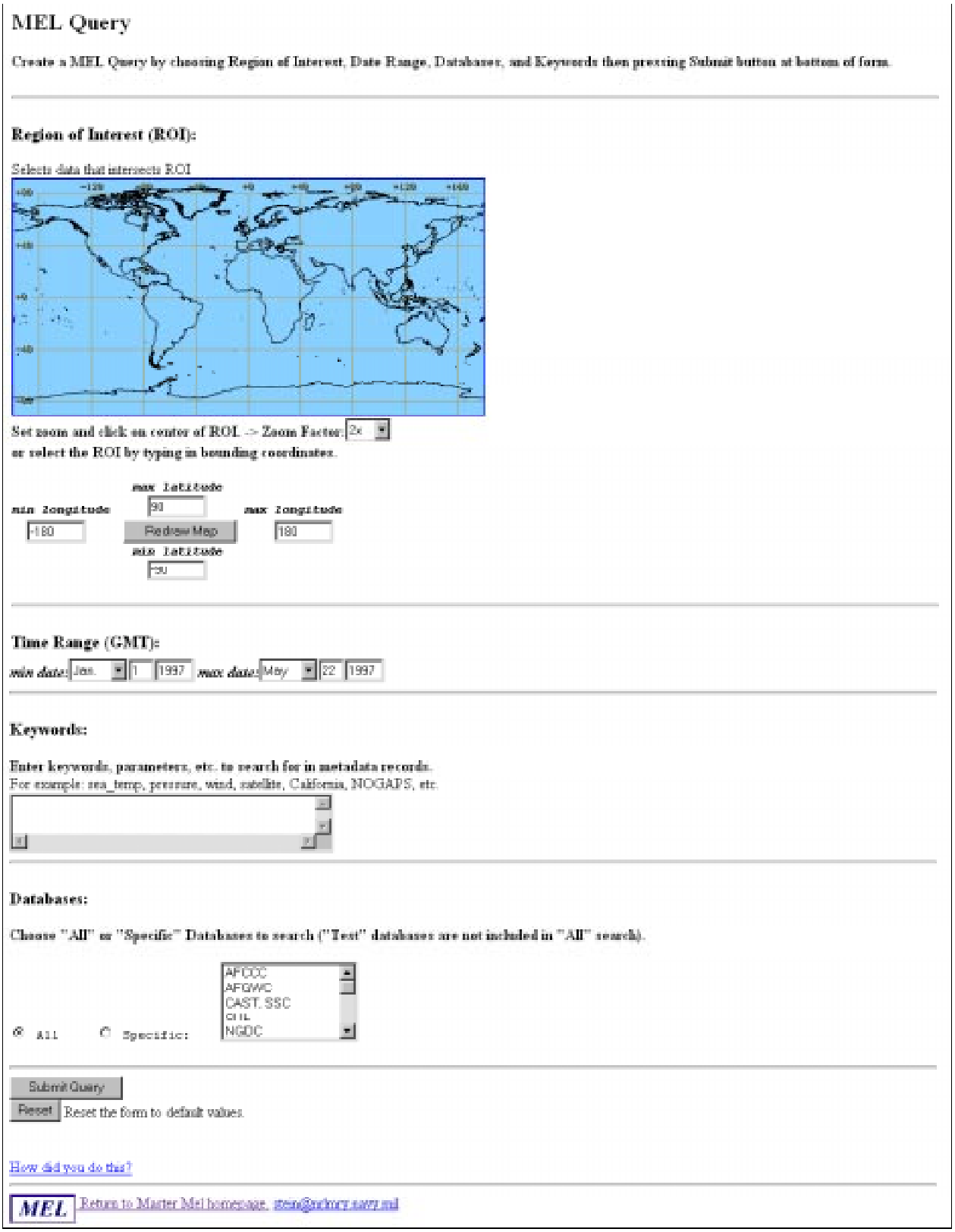


Figure 4. HTML Query Page

5.3.1 REGION OF INTEREST

The Region of Interest (RoI) may be selected using either the Interactive Map or Specification of Longitude and Latitude Range features described below.

5.3.1.1 INTERACTIVE MAP

To use the Interactive Map feature, select a zoom factor (default is 2x) and click on the map position of interest. The map automatically narrows the field of view and expands the region of interest by the stated factor. The longitude and latitude boundaries of the map are automatically updated in the accompanying windows.

This process may be repeated as often as desired to narrow to the particular region of interest. If the zoom has become too large, negative zoom factors may be chosen to reduce the scale of the map.

5.3.1.2 SPECIFICATION OF LONGITUDE AND LATITUDE RANGE

Instead of using the Interactive Map feature, users may specify the longitude and latitude limits, in decimal degrees, in the windows provided. Note that longitudes west of the Prime Meridian and latitudes south of the Equator are entered as negative numbers. The **Redraw Map** button in the center of the longitude/latitude specification windows then redraws the map to display the specified RoI.

5.3.2 TIME RANGE (GMT)

The Time Range Selection feature (Figure 5) is used to specify the min (start) and max (stop) dates, in Greenwich Mean Time (GMT) month, day, and year, for which metadata will be searched. The min and max months have drop-down lists from which to make a selection. The min and max days and years are typed into the windows provided.

Figure 5. HTML Query Time Range Selection

5.3.3 KEYWORDS

Keywords are used to specify the type of metadata to be retrieved and are entered in the text entry box provided (Figure 6) in the Keywords section of the HTML Query form. Keywords should be entered one to a line, using as many as needed to adequately describe the dataset. For example:

```
sea_temp
pressure
NOGAPS
California
```

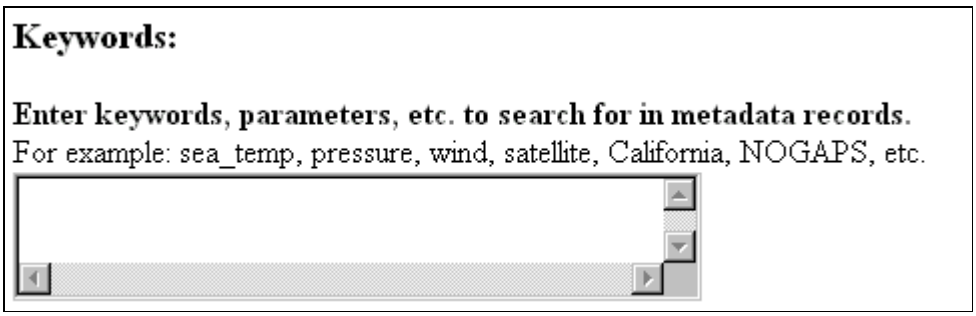


Figure 6. HTML Query Keywords Text Entry Box

5.3.4 DATABASES

The Databases area of the HTML Query form (Figure 7) is used to designate a search of all available databases or to limit the search to specific databases. To search all available databases select **All**. To search only selected databases, select **Specific** and highlight one or more database sites from the accompanying list.

To highlight a specific database, move the pointer to the desired database site and click the left button on the pointing device. To remove a highlight, click on the database site again to deselect it.

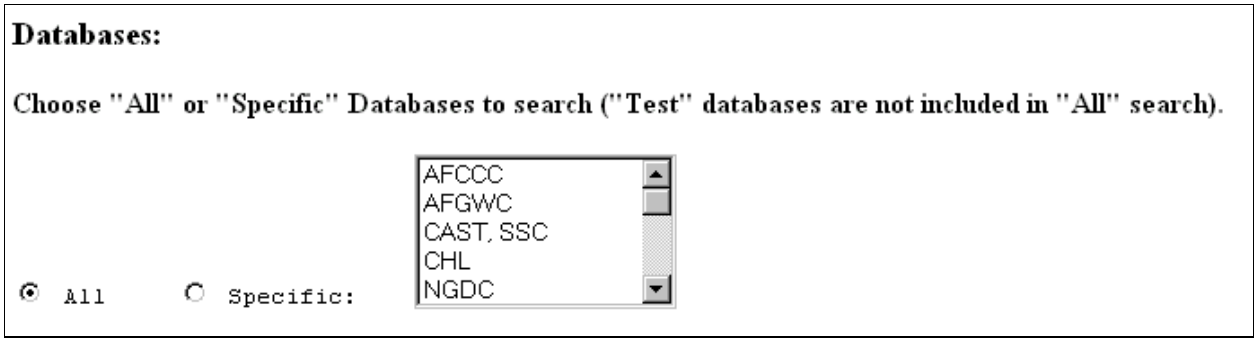


Figure 7. HTML Query Database Selection Area

5.3.5 RESET

Select **Reset** to return all parameters to default values.

5.3.6 SUBMIT QUERY

When all necessary parameters have been entered, select **Submit Query** to have the HTML Query form processed. Information will be returned stating which databases were available to satisfy the request.

5.3.6.1 METADATA QUERY RESULTS

The Metadata Query Results (Figure 8) are returned as a listing of the databases which satisfy the user's request, with hyperlinks to the associated metadata records. Each listing provides a color coded button with red indicating global coverage for the dataset and other colors presenting a color key to a reference map for dataset coverage.

Selecting a database hyperlink displays the metadata record describing that data and provides a **Generate Order Form** button to order the data, if desired. Additional metadata records may be selected by using the **Back** button on the Web Browser in an iterative process.

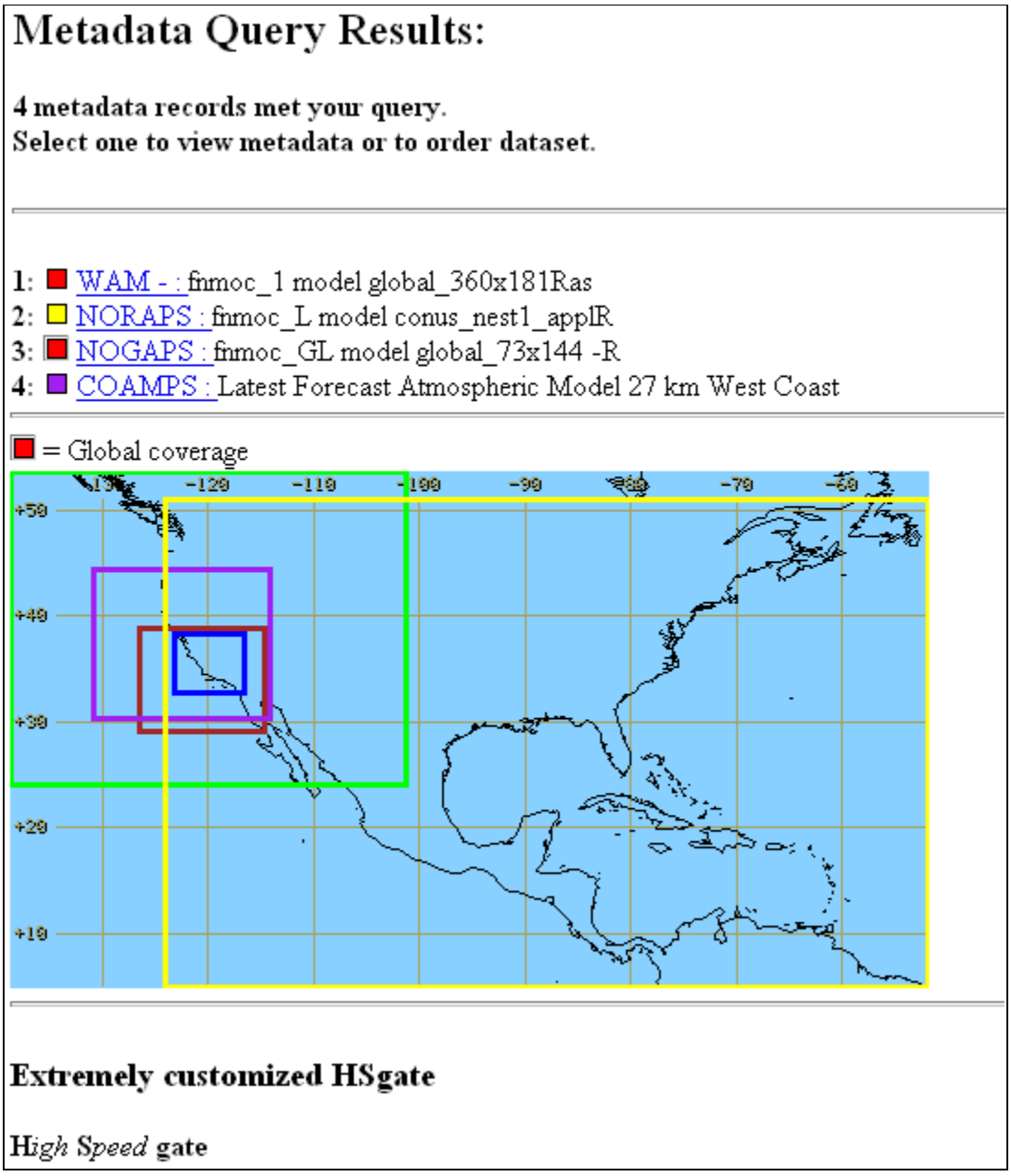


Figure 8. Metadata Query Results

5.3.6.2 METADATA

Each metadata record (Figure 9) is in a standard format listing information about the dataset in the following five categories:

a. Identification Information – Basic information about the dataset, including description, bounding coordinates, and keywords.

b. Data Quality Information – A general assessment of the quality of the dataset.

c. Entity and Attribute Information – Information about the content of the dataset, including the entities types, their attributes, and the domains from which attribute values may be assigned.

d. Distribution Information – Information about the distributor of and options for obtaining the dataset.

e. Metadata Reference Information – Information on the currency of the metadata information, and the responsible party.

After reviewing the metadata record the dataset can be requested by selecting **Generate Order Form** at the top of the metadata record.

Figure 9. Metadata Record

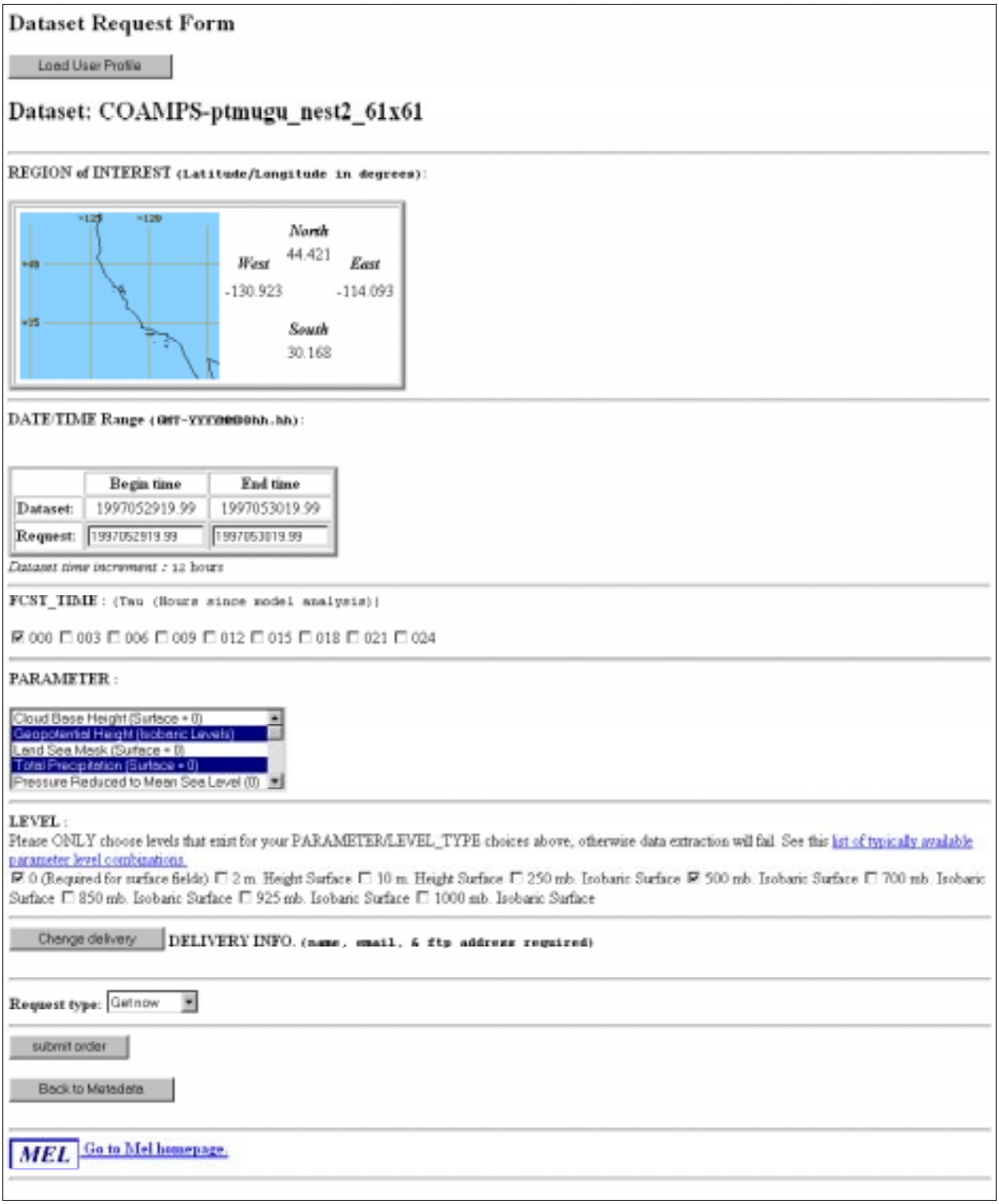


Figure 10. Dataset Request Form

5.3.6.3 DATASET REQUEST FORM

The **Dataset Request Form** (Figure 10) provides a check of the dataset requested and RoI with, where appropriate, the possibility to specify the sub-type of data within the larger dataset.

5.3.6.3.1 Load User Profile

All User Profiles are stored at the MEL Access Site. The **Load/Create/Change User Profile** form (Figure 11) lets the user Load an existing User Profile, Change an existing User Profile, or Create a new User Profile. Each of these three procedures start with the entering of the user's e-mail address in the first text entry box. Type in the entire e-mail address, for example, *doej@itsi.dma.mil*.

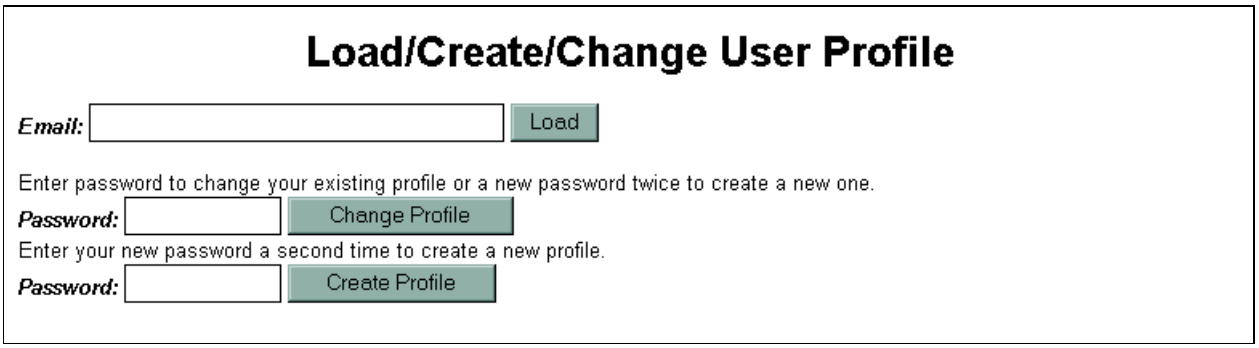


Figure 11. Load/Create/Change User Profile

5.3.6.3.1.1 Load Existing User Profile

If a User Profile for the e-mail address has been previously established and is still appropriate, select **Load** to load that profile. The display returns to the Dataset Request Form and the Delivery Information from the User Profile is automatically inserted in the form.

5.3.6.3.1.2 Change Existing User Profile

If the previously established User Profile for the e-mail address is no longer appropriate, the user can enter a password in the first password text entry box and select **Change Profile**. The User Profile Form (Figure 12) will be displayed and the information can be corrected/changed. Selecting **Reset** at any time will restore all values from the saved version of the User Profile.

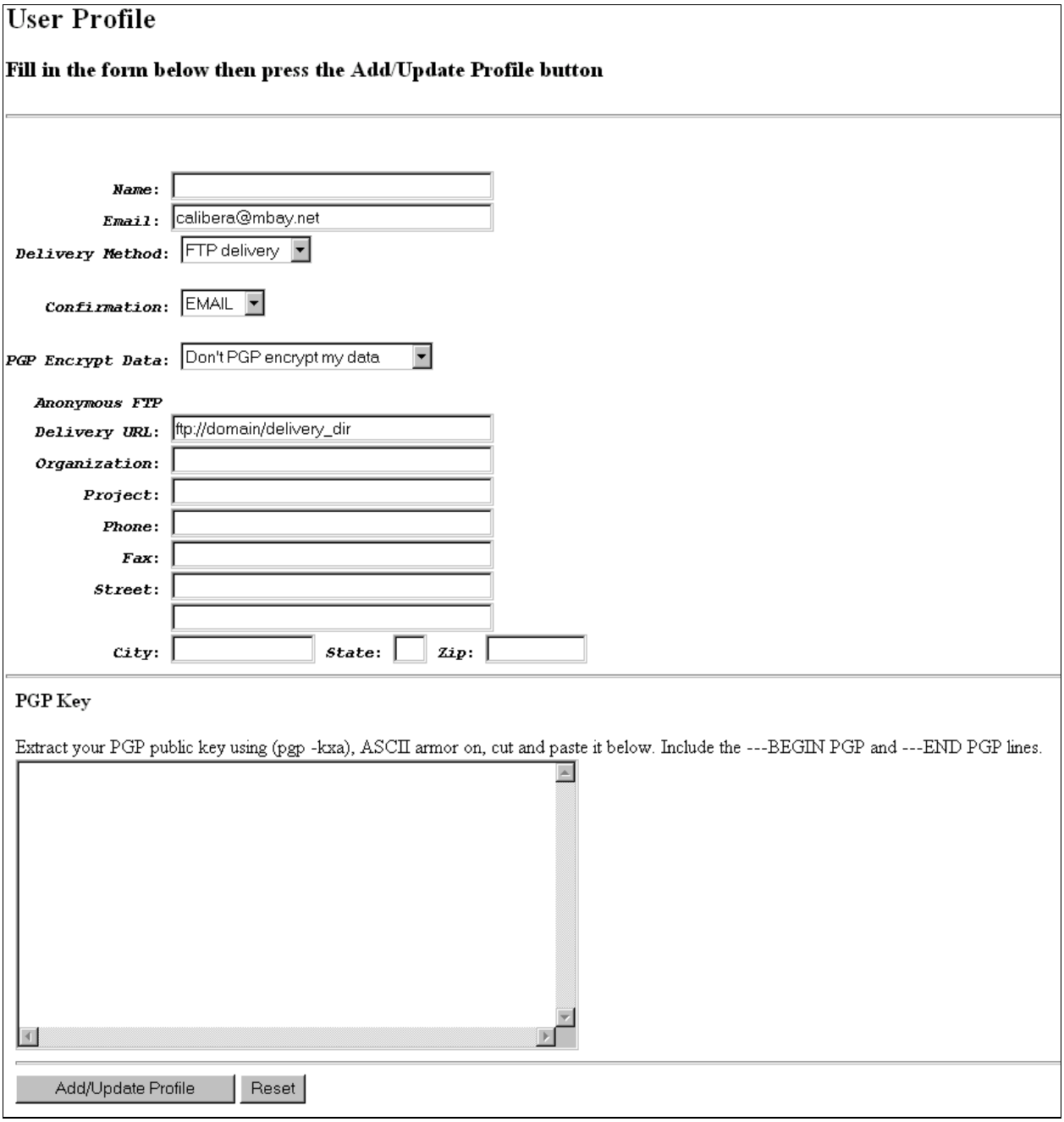


Figure 12. User Profile Form

When the **User Profile** (Figure 12) form has been completed, select **Add/Update Profile** to submit the new/revised information. The Delivery Information is then inserted into the Dataset Request Form and the user is returned to that form.

5.3.6.3.1.3 Create User Profile

To create a new User Profile from the Load/Create/Change User Profile form (Figure 11), enter a complete e-mail address in the **Email** text entry box, move the pointer to the first password text entry box and enter a valid MEL password (asterisks will be displayed for security purposes), move the pointer to the second password text entry box and retype the MEL password (to verify the previous password entry), and select **Create Profile**. The User Profile form (Figure 12) is displayed and the appropriate entries are typed into the form.

If the entry in the **PGP Encrypt Data** list box is set to *Encrypt data with my PGP key,* the PGP public key must be extracted and placed in the **PGP Key** text entry box at the bottom of the form. No entry in the **PGP Key** text entry box is required if data will not be encrypted.

When the User Profile form has been completed, select **Add/Update** to record the information at the MEL Access Site. The display will return to the Dataset Request Form (Figure 10) with the delivery information from the loaded User Profile.

5.3.6.3.2 Dataset

Dataset specifies which dataset has been requested.

5.3.6.3.3 Region of Interest

The Region of Interest indicates both numerically and graphically the RoI selected. Note that longitudes west of the Prime Meridian and latitudes south of the Equator are entered as negative numbers.

5.3.6.3.4 Channel

Channel allows selection of different data options, if available.

5.3.6.3.5 Delivery Information

Delivery Information displays the information specified. If it is incorrect, select **Change Delivery** to access the Load/Create/Change User Profile form (Figure 11).

5.3.6.3.6 Request Type

Request type offers a drop-down list to select *Get Now* for immediate order of the dataset or *Subscribe* for subscription to the data on a regular schedule.

5.3.6.3.7 Submit Order

Submit Order transmits the data request to the MEL. An acknowledgment of the request is provided as shown in Figure 13 and selecting **See text of order** displays the details of the order. The MEL Data Request Acknowledgment also provides hyperlinks to compose new HTML or Java queries.

Figure 13. MEL Data Request Acknowledgment

5.3.6.3.7.1 Get Now

Get Now orders are acknowledged and delivered to the specified address as soon as the dataset can be accessed and delivered.

5.3.6.3.7.2 Subscribe

Subscribe orders are acknowledged and delivered to the specified address as soon as the dataset can be accessed and delivered. Additionally, an updated dataset is delivered any time that the requested dataset is modified or extended.

5.4 JAVA QUERY PROCESSING PROCEDURES

The **JAVA Query** (Figure 14) page allows the user to specify the parameters of the desired environmental data. While the HTML Query is more text-based, the JAVA Query is more graphics-based.

The interactive graphic produced by the Java applet allows, by selection of the tabs at the top, specification of spatial region of interest, temporal range of interest, keyword choice, and choice of Resource Site servers.

Figure 14. JAVA Query

The Java interactive graphic lets the user enter the boundaries of the region of interest in windows provided, zoom in to the specified region (**Zoom In**), zoom out again (**Zoom Out**), or return to a global view (**Global**). Political Boundaries or Rivers can be added by selecting a checkbox, or previously **Preset Regions** can be retrieved by setting a toggle button. For some areas, at high levels of zoom, a more detailed view of local features is available through the **Show Detailed Map** button.

A button is provided to include (set) or exclude (not set) a spatial term in the query specification and a drop-down list permits specification of the relative overlap of the data with the search region.

The bottom of the Java graphic offers access to the following functions:

a. **Submit Query**: Submit the query parameters to the MEL for processing.

b. **Reset This**: Reset the Query parameters on the presently displayed JAVA graphic to default parameters.

c. **Reset All**: Reset all Query parameters on all JAVA graphics to default parameters.

d. **Help:** Open a new Web Browser providing detailed description and help for the specification of Query parameters.

At the bottom of the page is a hyperlink to send an e-mail to the JAVA Query maintainer and additional information on the construction of the page.

5.4.1 SPATIAL REGION OF INTEREST

The Spatial Region of Interest (SRoI) may be selected in two ways: Interactive Map or Specification of Longitude and Latitude Range.

5.4.1.1 INTERACTIVE MAP

To use the Interactive Map, move the cursor to the region of interest and depress the “select” mouse button to select the upper left hand corner of the SRoI. Holding the button down, drag the cursor to the lower right hand corner of the SRoI and release. This marks the SRoI and selecting **Zoom In** alters the map to display the expanded SRoI. The longitude and latitude boundaries of the new map are automatically updated in the accompanying windows.

This process may be repeated as often as desired to narrow to the particular region of interest. If the zoom has become too large, **Zoom Out, Global,** or **Reset This** buttons can be selected to return to earlier displays.

5.4.1.2 SPECIFICATION OF LONGITUDE AND LATITUDE RANGE

In place of using the Interactive Map, the user may specify the longitude and latitude limits, in decimal degrees, in the windows provided. Selecting **Zoom In** redraws the map to display the specified SRoI.

5.4.2 TEMPORAL RANGE OF INTEREST

The Temporal Range of Interest (TRoI) (Figure 15) may be selected by specifying:

Range, with start and stop dates

Relative, specifying a number of days prior to the present date

The interface also has drop-down lists to specify a selection of date **Separators** and date **Formats.** Checkboxes enable options to include temporal terms and check dates on data types which are not intrinsically time variable.

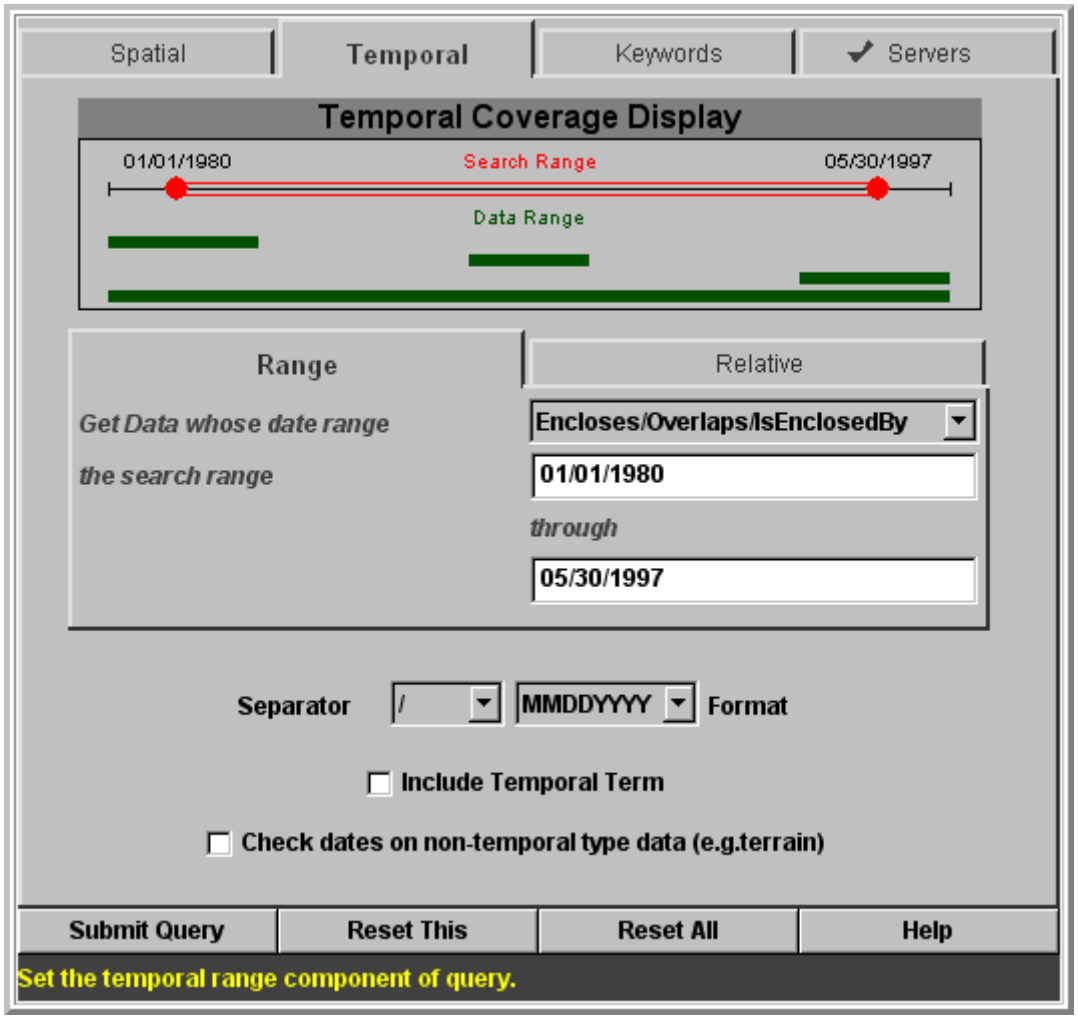


Figure 15. Temporal Range of Interest

5.4.2.1 RANGE

The Temporal Range menu includes two tab windows (Range shown in Figure 15), where start date and end date of the temporal Range of Interest can be specified (Range or Relative) and an area with a dynamic slider to indicate the type of overlap permitted between the dataset and the TRoI specified.

5.4.2.2 RELATIVE

The Relative Dates of Interest (Figure 16) tab permits the specification of a logical time period relevant to the present date (for example, Current Month). The MEL interface will express this period in days relative to the present date. **Predefined Date Ranges** may be selected from the accompanying drop-down list.

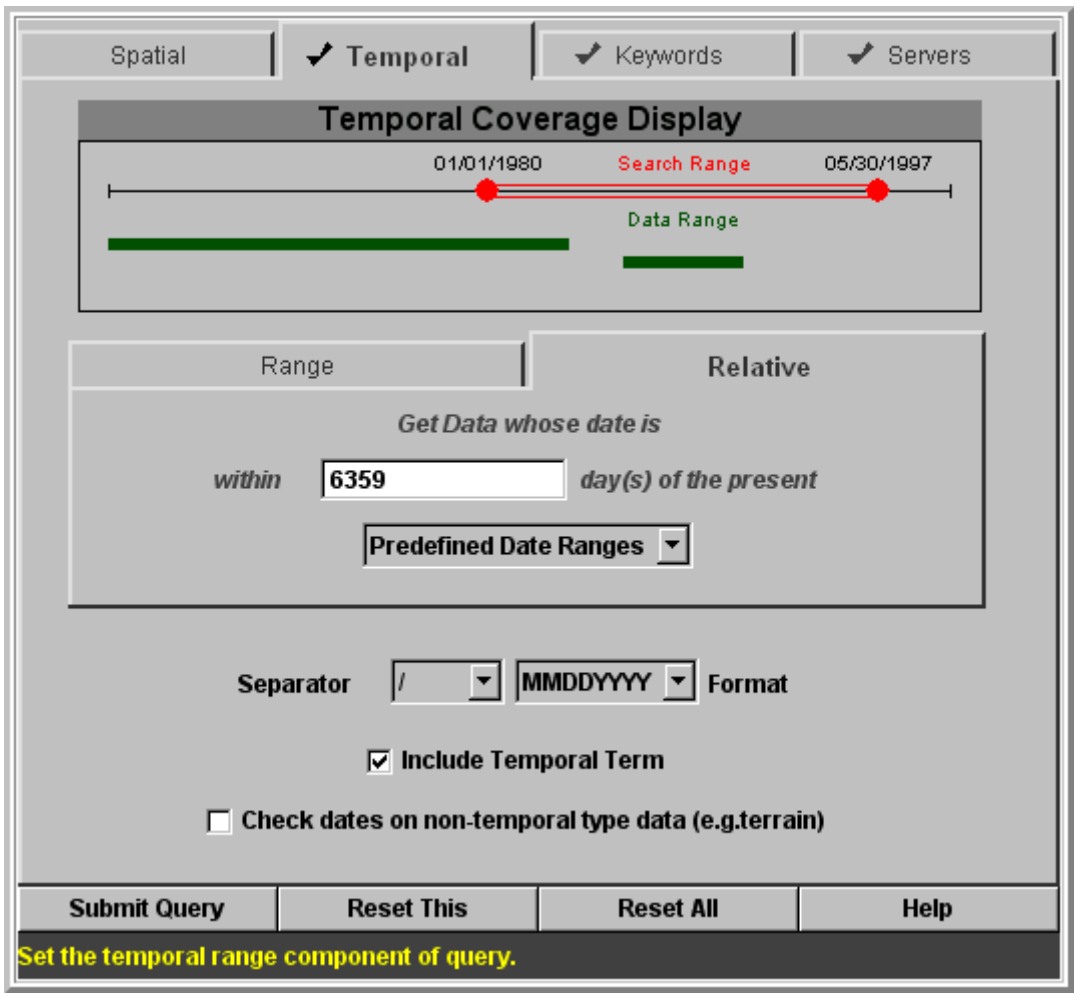


Figure 16. Relative Dates of Interest

5.4.3 KEYWORDS

Categories in **Keywords** (Figure 17) specify the type of data to be requested and can be selected from the scrollable window provided on the graphic.

a. **Themes** lists available data sources, models, etc. Selecting a theme displays the available Keywords for that theme and selecting a Keyword places it on the keyword list displayed on the graphic.

b. **Places** lists available geographical/political entities. Selecting **Countries, US States, Regions,** or **Cities** displays available Keywords and selecting a Keyword places it on the keyword list displayed on the graphic.

c. **Strata** lists available grid levels. Selecting a grid level displays available Keywords and selecting a Keyword places it on the keyword list displayed on the graphic.

d. **Temporal** lists available time periods. Selecting a time period displays available Keywords and selecting a Keyword places it on the keyword list displayed on the graphic.

As many keywords as desired to describe the dataset may be selected.

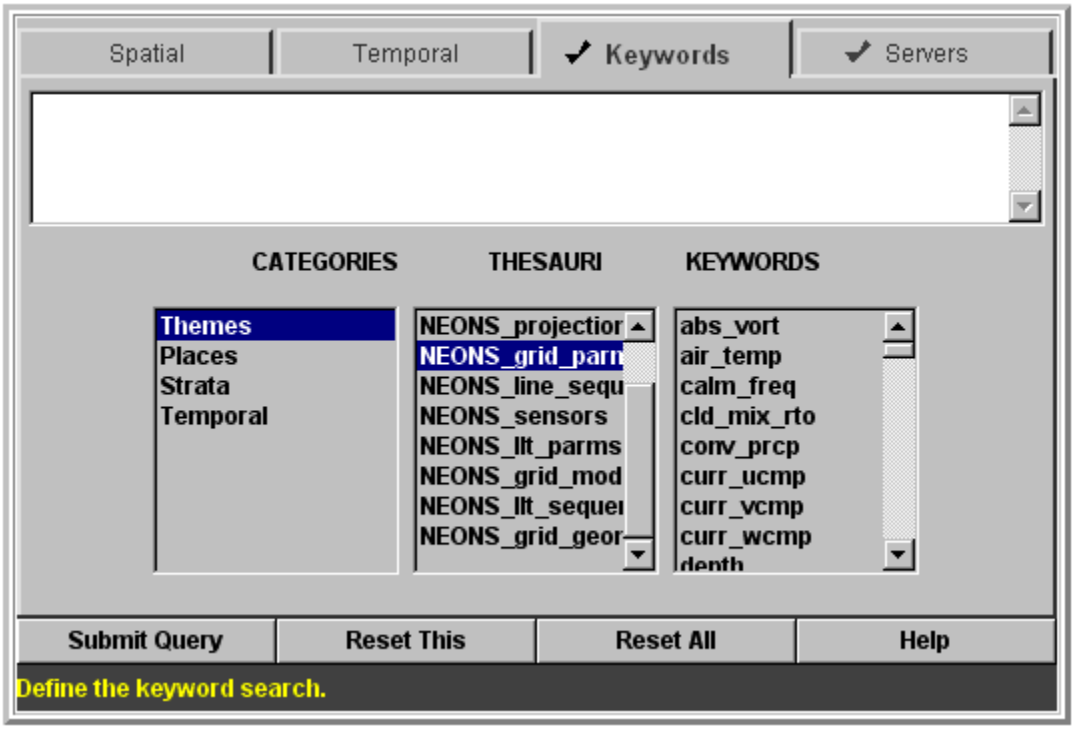


Figure 17. Keywords

5.4.4 SERVERS

Servers (Figure 18) shows the available MEL Resource Site Servers on an interactive map and as a listing. The Interactive Map may be displayed by enabling the **Map** checkbox, and the names of the Servers may be displayed on the Interactive Map by checking the **Display Names**. If a Interactive Map region is selected, the **Set Sites in Region** button will select all sites within the specified region.

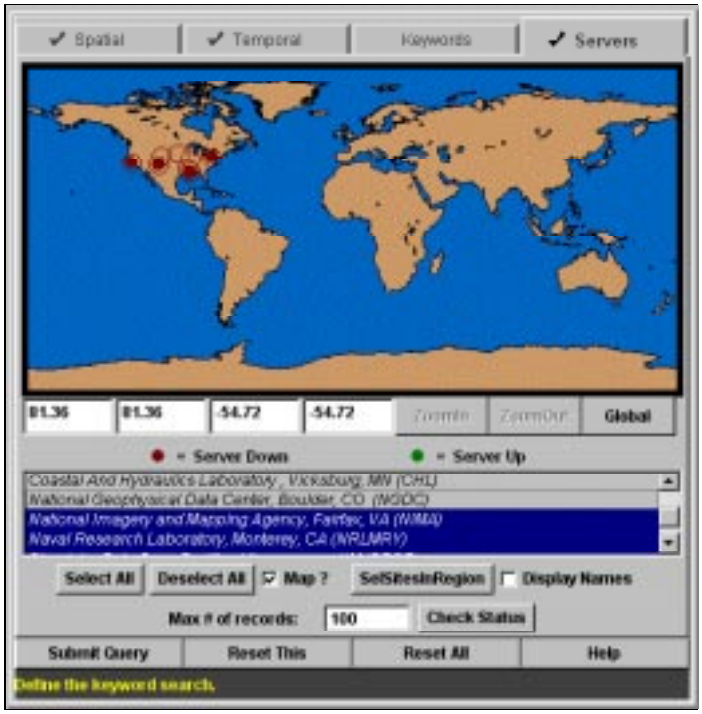


Figure 18. Servers

5.4.4.1 INTERACTIVE MAP

The Interactive Map has similar **Zoom In/Out** and active buttons to those described in paragraph 5.4 (Figure 14). The Interactive Map also shows whether a Server is up (green) or down (red) by the color of its indicator mark and a selected Server shows a solid indicator while a deselected Server shows an empty indicator.

◉ = Selected ○ = Deselected

5.4.4.2 LISTING

The scrollable Listing provides the names and locations of all available Servers. Any number of these can be selected (highlighted) or deselected (highlight off) individually or by using the accompanying **Select All** and **Deselect All** buttons.

5.4.5 SUBMIT QUERY

Submit Query sends the JAVA Query form for further processing and returns information on databases available which satisfy the request.

5.4.5.1 QUERY RESULTS

The **Query Results** (Figure 19) are returned as a listing of the databases which satisfy the User's request with active buttons to access the **Data** order form or the **MetaData** record. Each listing provides a color coded button with blue indicating that the coverage of the dataset is global and other colors referring to smaller coverage areas which are indicated on the accompanying map.

The Visualization Tools allow display of Spatial, Temporal, Browse, and Combined modes:

a. **Spatial** provides a graphical display of the spatial regions covered by the selected datasets.

b. **Temporal** provides a graphical display of the time ranges covered.

c. **Browse** provides different formats to view the dataset coverage.

d. **Combined** provides an overview of the selected datasets giving availability of their Spatial and Temporal Coverage, and Browse views.

Selecting **MetaData** displays the metadata record describing the data. Selecting **Generate Order Form** orders the data, if desired. Additional metadata records can be selected.

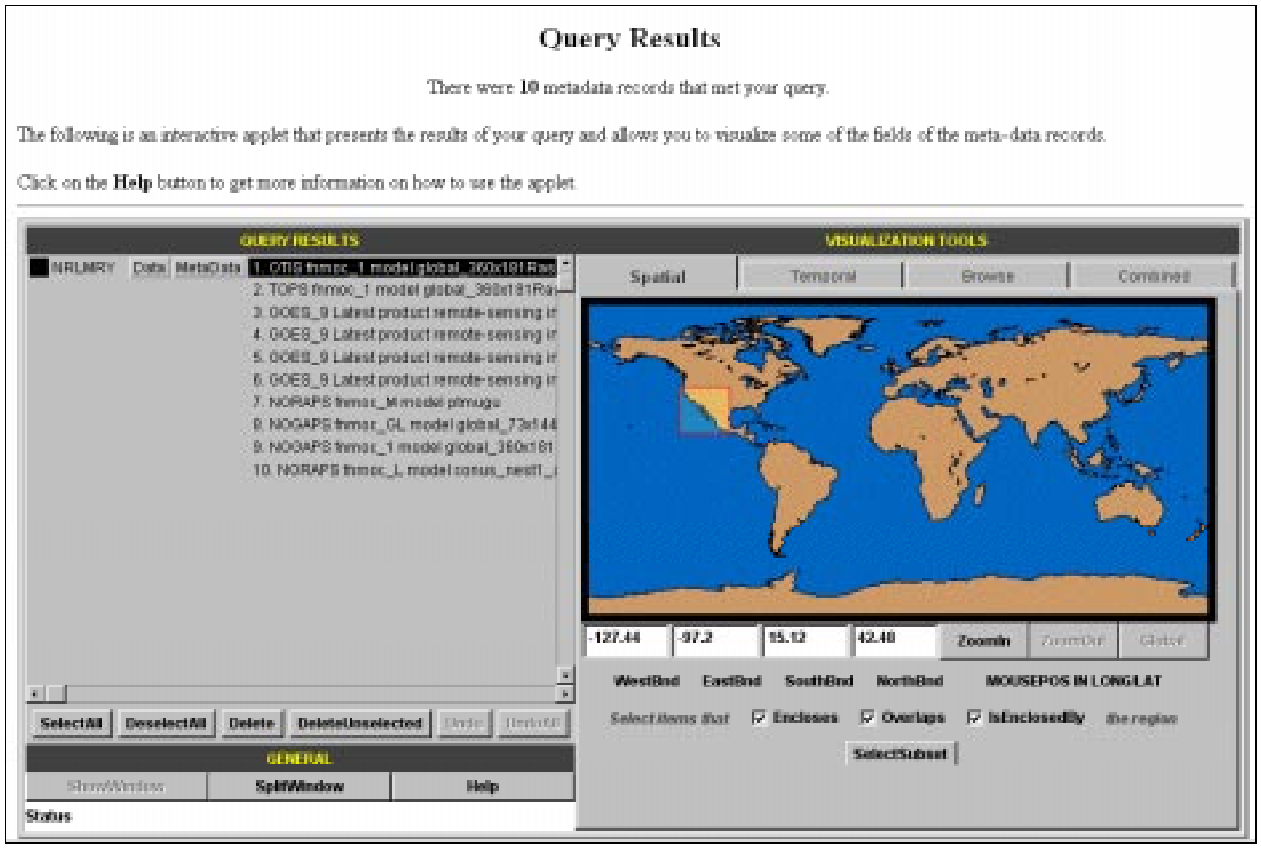


Figure 19. Query Results

5.4.5.2 METADATA

Each **Metadata Record** (Figure 20) is in a standard format listing Identification Information, Data Quality Information, Entity and Attribute Information, Distribution Information, and Metadata Reference Information and allows the user to determine if the dataset should be requested.

To request the dataset, select **Generate Order Form** at the top of the Metadata record.

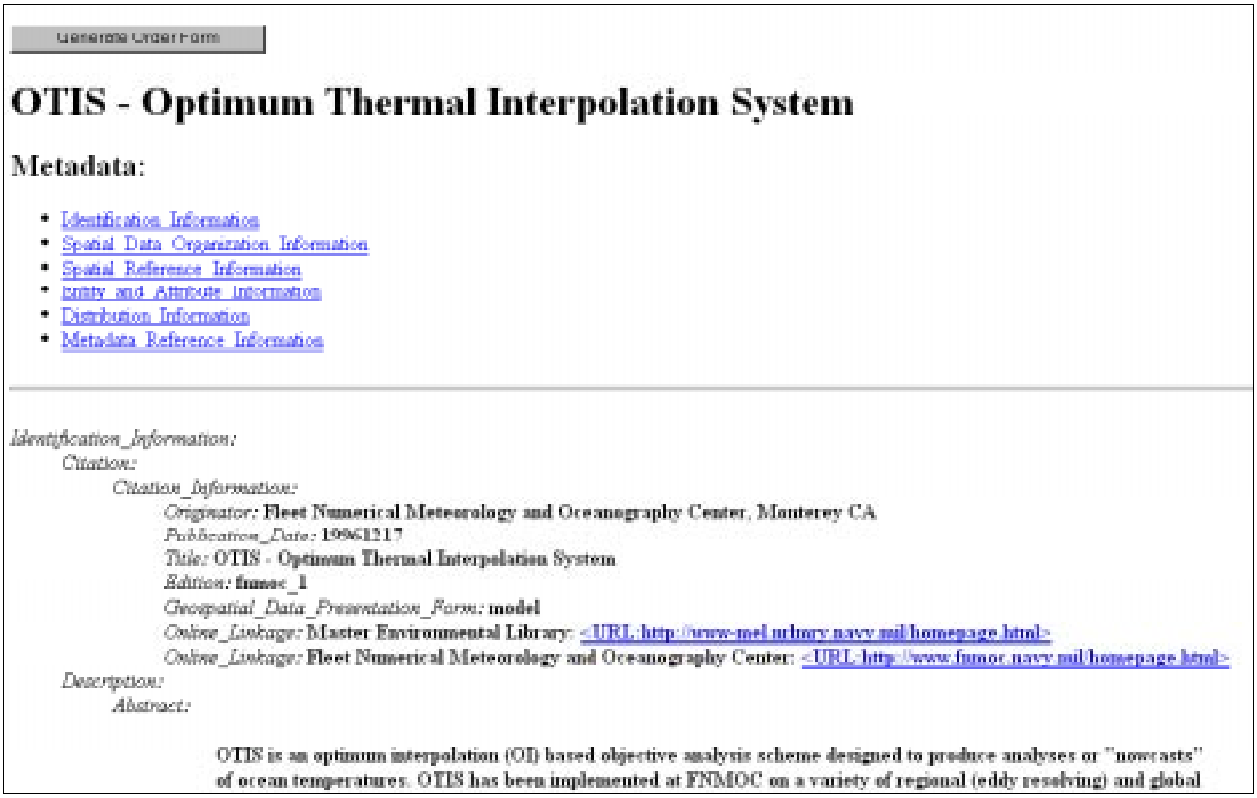


Figure 20. Metadata Record

5.4.5.3 DATASET REQUEST FORM

The **Dataset Request Form** (Figure 21) provides a check of the dataset requested and Region of Interest with, where appropriate, the possibility to specify the sub-type of data within the larger dataset.

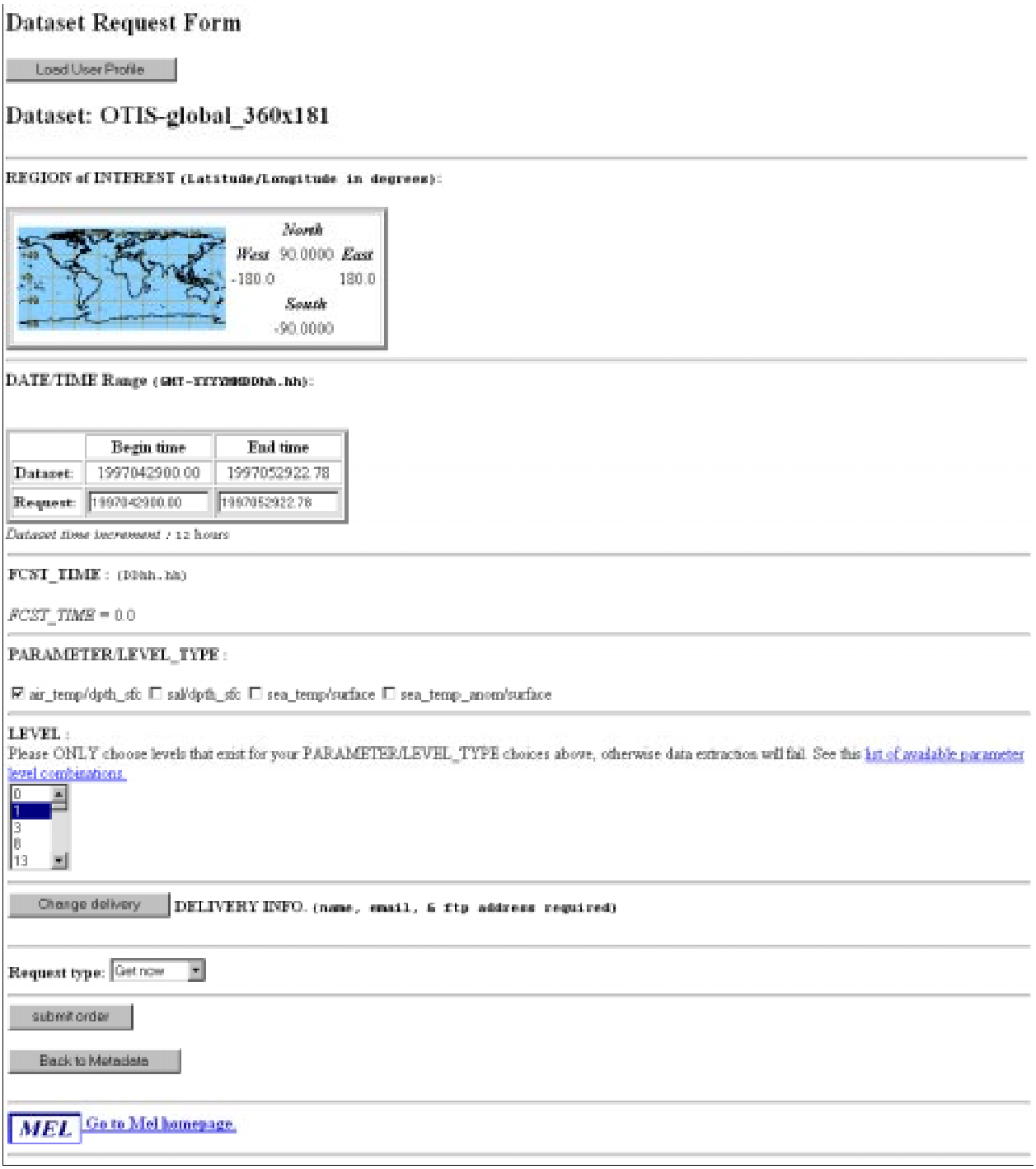


Figure 21. Dataset Request Form

5.4.5.3.1 Load User Profile

The **Load/Create/Change User Profile** form (Figure 22) permits the user to load an Existing User Profile, Change an Existing User Profile, or Create a new User Profile by entering an e-mail address in the top window.

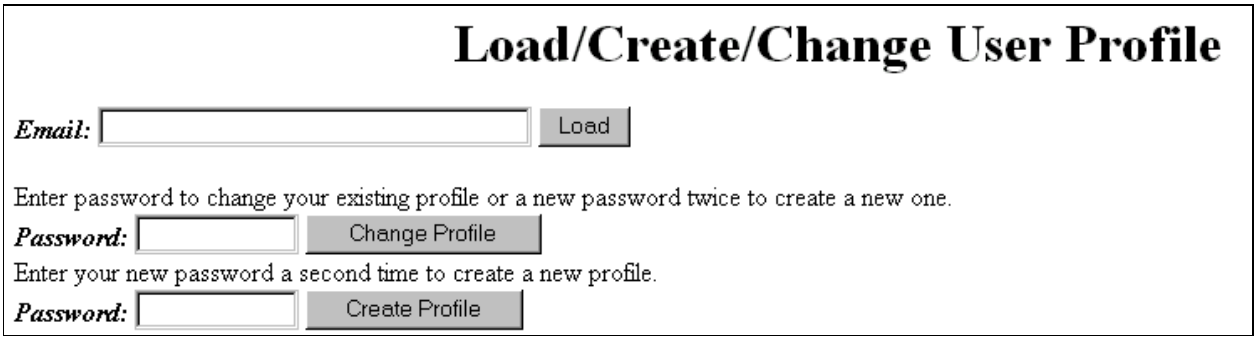


Figure 22. Load User Profile

5.4.5.3.1.1 Load Existing User Profile

If a User Profile for the entered e-mail address has previously been established and is still appropriate, the user need only select the **Load** button to load that profile. The Delivery Information is then inserted into the Dataset request form and the user is returned to that form.

5.4.5.3.1.2 Change Existing User Profile

If the previously established User Profile for that e-mail address is no longer appropriate, the user can enter the password in the middle window and select the **Change Profile** button. The **User Profile** Form will be displayed as shown in Figure 23 for the user to enter the required information in the text entry boxes.

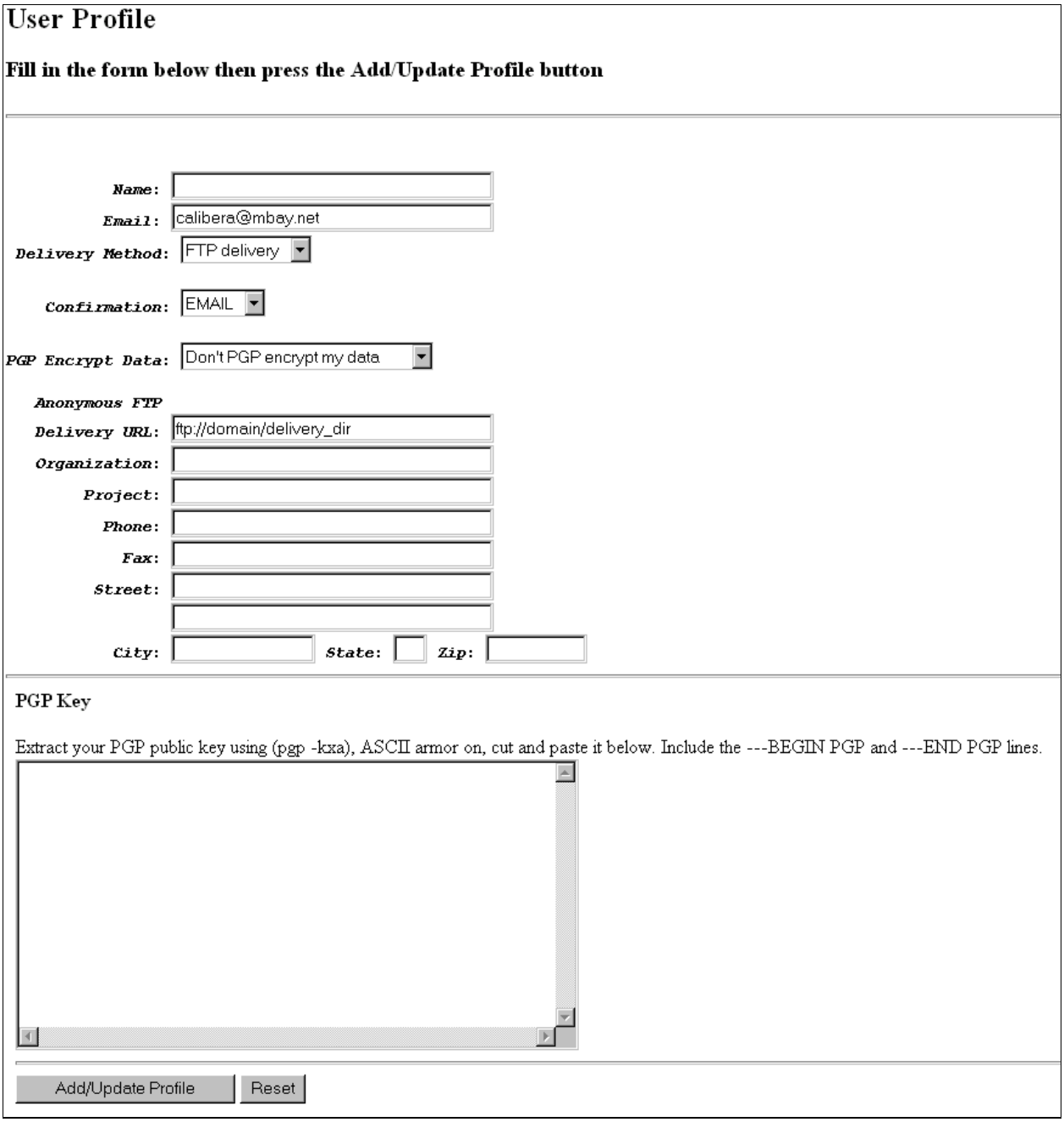


Figure 23. User Profile

When the **User Profile** form has been completed, select **Add/Update Profile** to submit the information to the MEL. The Delivery Information is then inserted into the Dataset request form and the user is returned to that form.

NOTE: A valid anonymous (public) FTP Universal Resource Locater (URL) address must be entered in the appropriate text entry box if you want ordered datasets to be sent to your ftp site. Failure to provide a valid FTP URL address will cause ordered datasets to be posted on the MEL FTP pick-up site.

5.4.5.3.1.3 Create User Profile

The user can create a new profile for a new e-mail address by entering the e-mail address in the top window and the password in BOTH the middle and bottom windows. Selecting the **Create Profile** button then provides a User Profile Form (Figure 23) where self explanatory windows and drop-down lists are provided for the required information.

When the **User Profile** form has been completed, the **Add/Update** button at the bottom submits the information to the MEL. The Delivery Information is then inserted into the Dataset request form and the user is returned to that form.

5.4.5.3.2 Dataset

Dataset specifies which dataset has been requested.

5.4.5.3.3 Region of Interest

The Region of Interest specifies numerically and shows graphically the RoI selected.

5.4.5.3.4 Channel

Channel allows selection of different data options such as Time Range and Parameter Level, if available.

5.4.5.3.5 Delivery Information

Delivery Information displays the information specified. If it is incorrect, select **Change Delivery** to access the Load/Create/Change User Profile form (Figure 11).

5.4.5.3.6 Request Type

Request Type offers a drop-down list for the immediate order of the dataset (*Get Now*) or subscription of the data on a regular schedule (*Subscribe*).

5.4.5.3.7 Submit Order

Submit Order transmits the data request to the MEL. An MEL Data Request Acknowledgment is provided (Figure 24) and from that details of the order may be viewed by selecting **See text of order**.

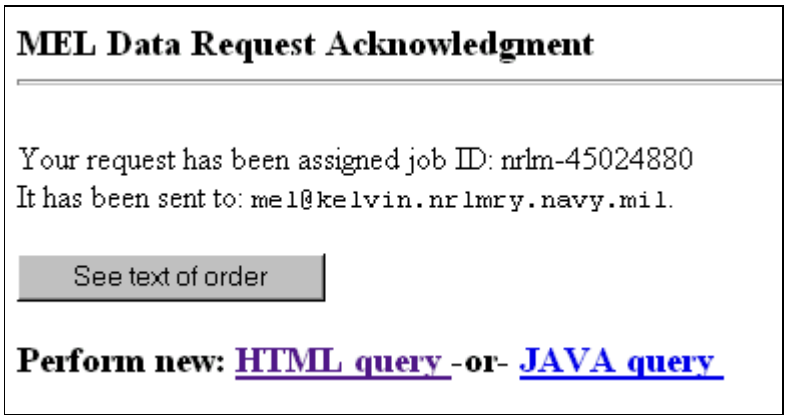


Figure 24. MEL Data Request Acknowledgment

5.4.5.3.7.1 Get Now

Get Now orders are acknowledged and delivered to the specified address as soon as the dataset can be accessed and delivered.

5.4.5.3.7.2 Subscribe

Subscribe orders are acknowledged and delivered to the specified address as soon as the dataset can be accessed and delivered. Additionally, an updated dataset is delivered any time that the requested dataset is modified or extended.

5.5 CHECK/CANCEL ORDERS PROCESSING PROCEDURES

The **Check/Cancel Orders** function (Figure 25) is password-restricted. Access requires entering a valid e-mail address and MEL password. This procedure ensures only the valid owner may check or cancel a MEL order.

NOTE: Should you forget your MEL password, a hyperlink is available to send an e-mail message to the **MEL System Administrator** requesting a new password.

Figure 25. Check/Cancel Orders Entry Form

After entering your e-mail address and MEL password, select **Submit** to access the **Check Order/Subscription Status** page (Figure 26).

Figure 26. Check Order/Subscription Status

The **Check Order/Subscription Status** page permits selection of the Resource Site of interest or can be left at the default setting of ALL. The **Check All Orders** button then queries the status of all orders pending or continuing under your e-mail address.

The top window permits entry of a particular order or subscription ID and the **Check an Order** button will provide information on its status. Entry of an order or subscription ID in the bottom window and the **Cancel Subscription** button will cancel any pending orders or standing subscriptions.

Since some sites are behind firewalls, the user cannot always see the status of an Order/Subscription. However, entry of a Order or Subscription ID and activation of the **Cancel Subscription** button will indeed cancel the Order/Subscription.

Hyperlinks to e-mail forms are provided for MEL PoCs and a hyperlink back to the MEL Home page is standard on all pages

5.6 ABOUT MEL PROCESSING PROCEDURES

The **About MEL** page (Figure 27) provides a very brief description of the MEL with hyperlinks to the HTML Query (see paragraph 2.1) form, JAVA Query (see paragraph 2.2) form, and the FGDC Metadata Standard home page. Thirteen additional hyperlinks (see Figure 27 and paragraphs 3.1 to 3.13) provide more detailed information on the structure and development of the MEL. Hyperlinks to e-mail forms are provided for several MEL PoCs. A hyperlink back to the MEL Home page is standard on all pages.

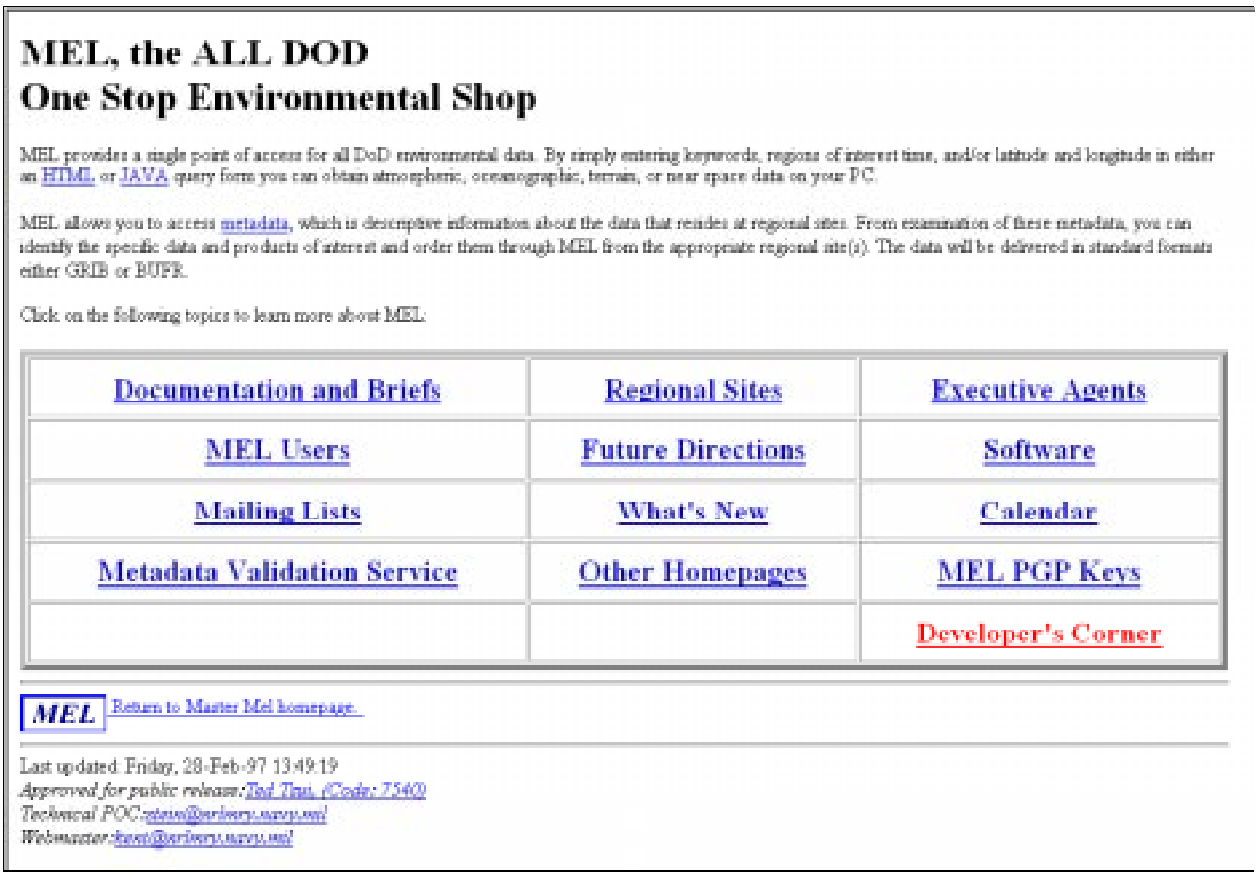
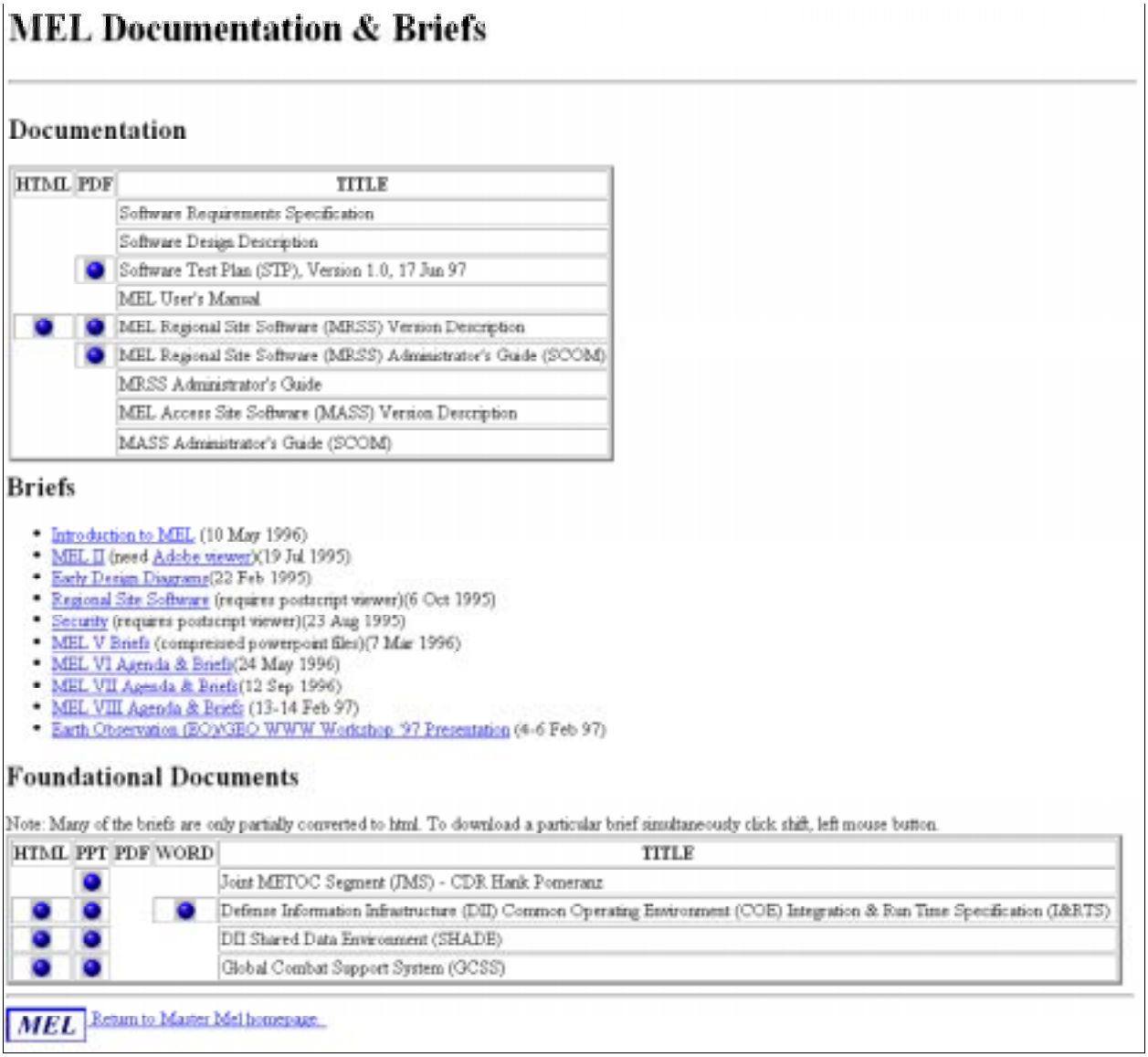


Figure 27. About MEL page

5.6.1 DOCUMENTATION AND BRIEFS

The **Documentation and Briefs** page (Figure 28) contains hyperlinks to MEL system documentation, briefings, and reports on the MEL system.



MEL Documentation & Briefs

Documentation

HTML	PDF	TITLE
		Software Requirements Specification
		Software Design Description
	●	Software Test Plan (STP), Version 1.0, 17 Jun 97
		MEL User's Manual
●	●	MEL Regional Site Software (MRSS) Version Description
	●	MEL Regional Site Software (MRSS) Administrator's Guide (SCOM)
		MRSS Administrator's Guide
		MEL Access Site Software (MASS) Version Description
		MASS Administrator's Guide (SCOM)

Briefs

- Introduction to MEL (10 May 1996)
- MEL II (need Adobe viewer)(19 Jul 1995)
- Early Design Diagrams(22 Feb 1995)
- Regional Site Software (requires postscript viewer)(6 Oct 1995)
- Security (requires postscript viewer)(23 Aug 1995)
- MEL V Briefs (compressed powerpoint files)(7 Mar 1996)
- MEL VI Agenda & Briefs(24 May 1996)
- MEL VII Agenda & Briefs(12 Sep 1996)
- MEL VIII Agenda & Briefs (13-14 Feb 97)
- Earth Observation (EO)/GEO WWW Workshop '97 Presentation (4-6 Feb 97)

Foundational Documents

Note: Many of the briefs are only partially converted to html. To download a particular brief simultaneously click shift, left mouse button.

HTML	PPT	PDF	WORD	TITLE
	●			Joint METOC Segment (JMS) - CDR Hank Pomeranz
●	●		●	Defense Information Infrastructure (DII) Common Operating Environment (COE) Integration & Run Time Specification (I&RTS)
●	●			DII Shared Data Environment (SHADE)
●	●			Global Combat Support System (GCSS)

MEL Return to Master Mel homepage

Figure 28. Documentation & Briefs Page

5.6.2 RESOURCE SITES

The **Resource Sites** page (Figure 29) displays a map of the U.S. with labeled dots (red = existing, yellow = future, and blue = potential future) representing sites which are or will be available to supply environmental data to MEL users. Each labeled dot represents a hyperlink to further information about that site.

Figure 29. MEL Resource Sites Page

At present these include:

a. NRLMRY - Naval Research Laboratory, Monterey, CA

b. SDBF - Simulator Data Base Facility, Kirtland AFB, NM

c. NGDC - National Geophysical Data Center, Denver, CO

d. AFGWC - Air Force Global Weather Center, Offutt AFB, NE

e. AFCCC - Air Force Combat Climatology Center, Scott AFB, IL

f. CHL - Coastal and Hydraulics Laboratory, Vicksburg, MS

g. MSU-CAST - Mississippi State University -- Center for Air Sea Technology, Stennis Space Center, MS

h. NAVOCEANO - Naval Oceanographic Office, Stennis Space Center, MS

i. TOWAN - Tactical Oceanography Wide Area Network, Stennis Space Center, MS

j. ARL - Army Research Laboratory, Aberdeen Proving Ground, MD

k. TMPO - Terrain Modeling Project Office, Bethesda, MD

l. TEC - Topographic Engineering Center, Alexandria, VA

m. PL - (USAF) Phillips Laboratory, Hanscom AFB, MA

5.6.3 EXECUTIVE AGENTS

The **Executive Agents** page (Figure 30) displays information about the M&S Executive Agents (EAs) who direct and fund the MEL project.

A DoD M&S Executive Agent is a DoD Component to whom the USD(A&T) has assigned responsibility and delegated authority for the development and maintenance of a specific area of M&S application, including relevant standards and databases, used by or common to many models and simulations.

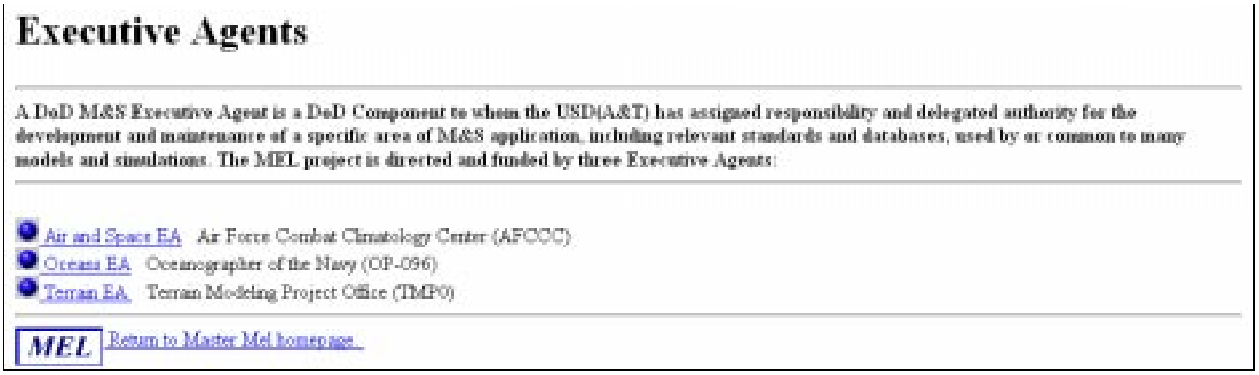


Figure 30. Executive Agents Page

The MEL project is directed by three EAs and hyperlinks are provided to each:

a. **Air and Space EA**: Air Force Combat Climatology Center (AFCCC)

b. **Oceans EA**: Oceanographer of the Navy (OP-096)

c. **Terrain EA**: Terrain Modeling Project Office (TMPO)

5.6.4 MEL USERS

The **MEL Users** page (Figure 31) lists a number of Users of the MEL with hyperlinks to each of the activities.

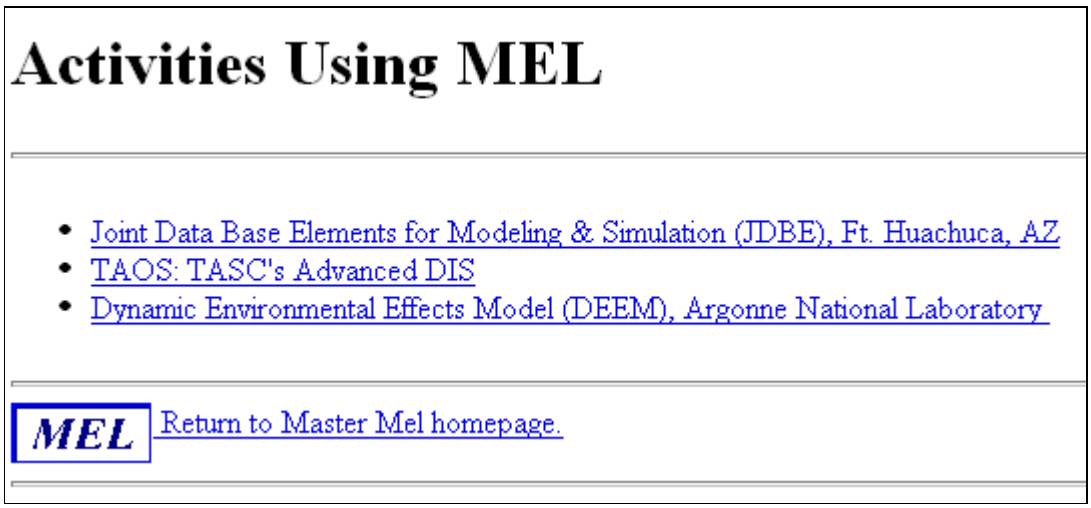


Figure 31. MEL Users Page

5.6.5 FUTURE DIRECTIONS

The **Future Directions** page (Figure 32) lists a number of the new areas of development with hyperlinks to information, illustrations, and test examples.

Figure 32. Future Directions Page

At present these include:

a. Data Visualization
b. Large Eddy Simulation Model Data
c. Weapon System Sensitivities
d. Model Output from the Army Research Laboratory

As these areas become operational they will be moved to the regular Web pages and as new areas are started for development they will appear on the **Future Directions** page.

5.6.6 SOFTWARE

The **Software** page (Figure 33) contains numerous hyperlinks to WWW sites with software and applications utilities which may be useful for obtaining, displaying, and analyzing data obtained from the MEL.

The available software and applications are listed in the following paragraphs.

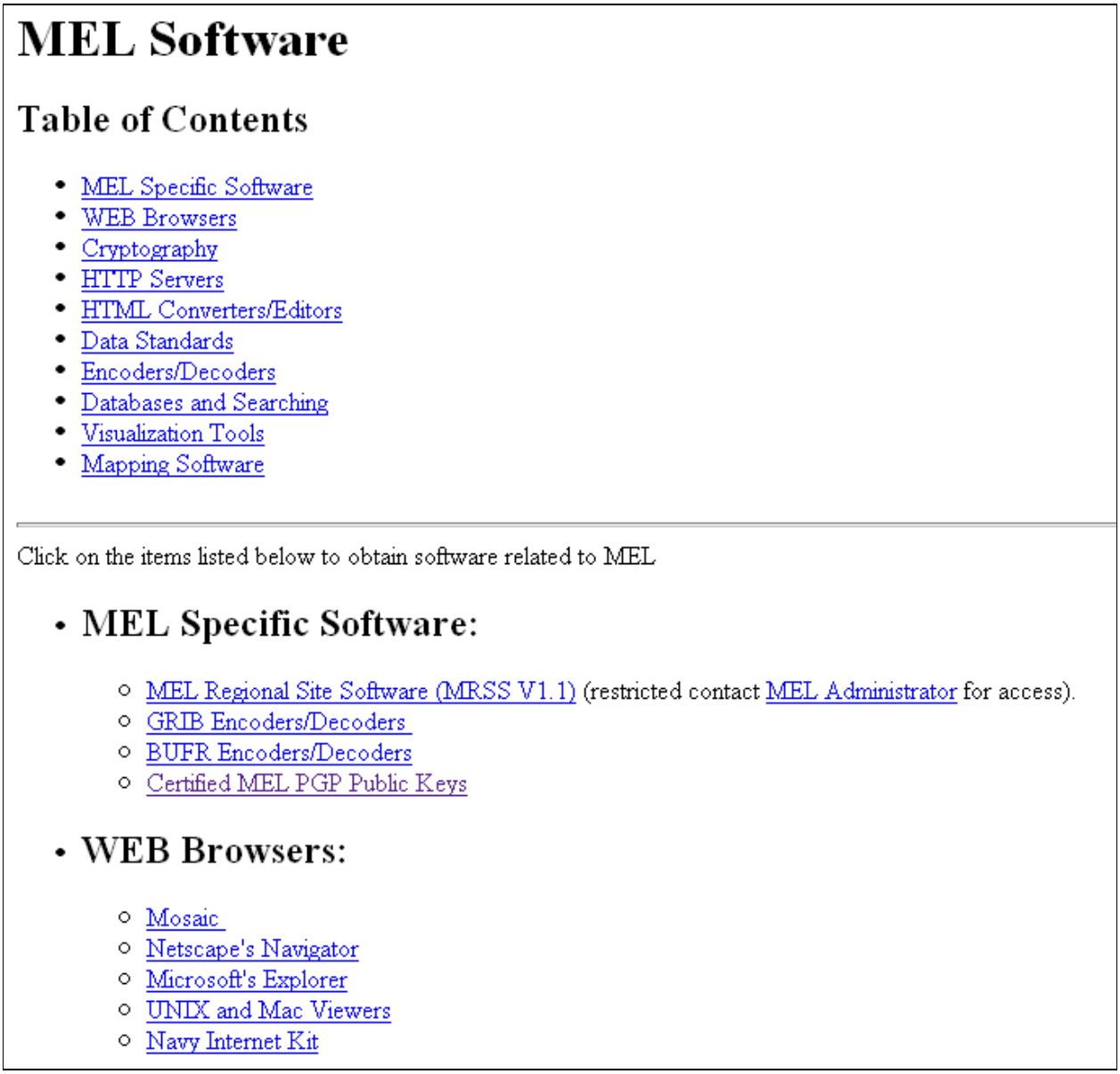


Figure 33. Software Page

5.6.6.1 MEL SPECIFIC SOFTWARE

a. MEL Resource Site Software (MRSS V1.1) (Restricted: Contact MEL Access Administrator for access)

b. GRIB Encoders/Decoders

c. BUFR Encoders/Decoders

d. Certified MEL PGP Public Keys

5.6.6.2 WEB BROWSERS

a. Mosaic

b. Netscape's Navigator

c. Microsoft's Explorer

d. UNIX and Mac Viewers

e. Navy Internet Kit

5.6.6.3 CRYPTOGRAPHY

a. PGP Manager

b. PGP (Pretty Good Privacy)

c. Certified MEL PGP Public Keys

d. Kerberos

5.6.6.4 HTTP SERVERS

a. NCSA's HTTP Server

b. Plexus Perl-based Server

c. CERN's HTTP Server

d. Numerous Other Servers

5.6.6.5 HTML CONVERTERS/EDITORS

a. About HTML

b. Developer's JumpStation

5.6.6.6 DATA STANDARDS

a. FGDC Metadata

(1) Metadata Validation Service

(2) Federal Geographic Data Committee - National Spatial Data Infrastructure and Content Standards for Digital Geospatial Data

(3) Metadata Creation Tools

(4) The Metadata Standard in ImageMap Form

(5) FGDC Content Standards for Digital Geospatial Metadata - hypertext view of standard

(6) Metadata Compiler - syntax checker and metadata formatter

a. Data Formats FAQ[4]

b. National Image Transfer Format Standard (NITFS)

c. Computer and Communication Standards

5.6.6.7 ENCODERS/DECODERS

a. MEL GRIB Page: This directory contains the MEL GRIB encoder/decoders.

b. BUFR Page: This directory contains the MEL BUFR encoder/decoders.

c. WMO GRIB decoder: World Meteorological Organization GRIB decoder

d. wgrib (Fiorino's Favorite)

e. WMO BUFR decoder

f. HDF: Hierarchical Data Format

g. About BUFR

h. About GRIB

5.6.6.8 DATABASES AND SEARCHING

a. NEONS: Naval Environmental Operational Nowcasting System

b. Yahoo Database

5.6.6.9 VISUALIZATION TOOLS

a. CAST's[5] GRIB Viewer for 2.0 GRIB files

> **NOTE**: You must have Motif 1.2, netCDF 2.32 and NcView-1.38 to compile and run the software.

b. Get and Test WWW Viewers

c. Vis5D: Interactive visualization of large 5-D gridded data sets

d. GrADS: Grid Analysis and Display System

e. IDL: Interface Design Language

f. PVWave: Data visualization tool

[4] Frequently Asked Questions
[5] Center for Air Sea Technology

g. FERRET: Visualization and analysis application for oceanographers and climate researchers

h. SciAn: Scientific Visualization and Animation tool

5.6.6.10 MAPPING SOFTWARE

MC&G[6] Utility Software Environment (MUSE)

5.6.7 MAILING LISTS

The **Mailing Lists** (Figure 34) provides access to numerous mailing lists concerning the MEL and its developers. Within access limitations on some mailing lists (see following paragraphs) a user may join as many mailing lists as appropriate and, after joining, both post messages and automatically receive copies of postings on that list by others.

Figure 34. Mailing Lists Page

[6] Mapping, Charting, and Geodysy

To join (subscribe) to a list a user must send an e-mail to:

majordomo@nrlmry.navy.mil
Subject:<blank>
Body: **subscribe mel_all** <or other mail list name>

To post a message on a list of which the user is a member (subscriber), send an e-mail to:

mel_<list_name>@nrlmry.navy.mil
Subject: <any>
Body: <any>

If the mailing list is password protected, contact the **MEL Administrator**, for which a hyperlink to an e-mail form is provided, and request access.

The categories of mailing lists available are:

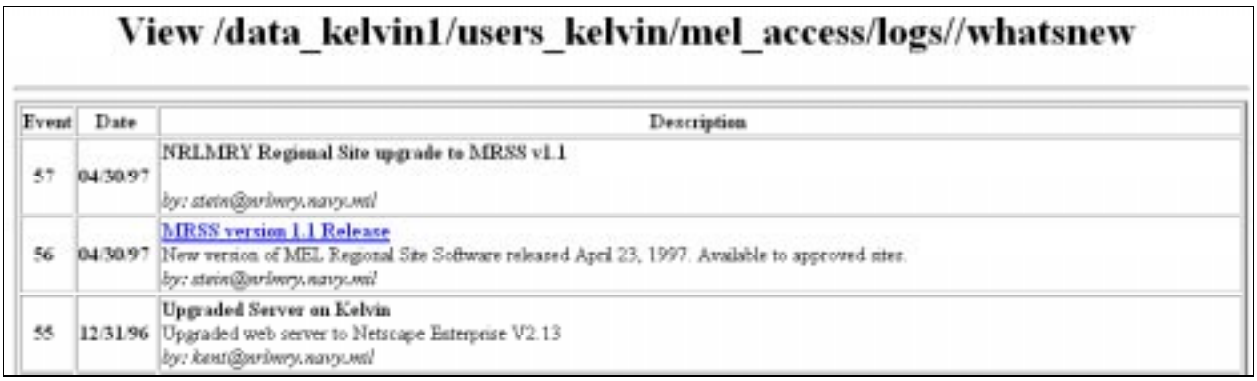
a. **mel_all**: A general bulletin board for all users of the MEL
b. **mel_developers**: A specialized bulletin board for the MEL Developers
c. **mel_bugs**: A specialized bulletin board for posting MEL discovered defects
d. **mel_metadata**: A specialized bulletin board for those involved in metadata production and maintenance
e. **mel_grib**: A specialized bulletin board for those concerned with use of GRIB format
f. **mel_products**: A specialized bulletin board for those concerned with MEL product development
g. **mel_bufr**: A specialized bulletin board for those concerned with use of the BUFR format
h. **mel_comments**: A general bulletin board for all users of the MEL to provide comments

Each mailing list selection provides access to the entire library (i.e., thread) of messages that have been submitted to that list. Messages are selected from the "Thread Index" or the "Date Index." The individual message pages also contain hyperlinks to related messages by both "thread" and "date" with return hyperlinks to the Thread Index and Date Index.

The page also provides links to the **DIS Conference Reflector** and to the **DIS Surf Zone Reflector** which contain listings of conferences, organizations, and planning capabilities**.**

5.6.8 WHAT'S NEW

What's New (Figure 35) lists any recent changes to MEL and important news of the MEL project.



View /data_kelvin1/users_kelvin/mel_access/logs//whatsnew

Event	Date	Description
57	04/30/97	NRLMRY Regional Site upgrade to MRSS v1.1 *by: stein@nrlmry.navy.mil*
56	04/30/97	MRSS version 1.1 Release New version of MEL Regional Site Software released April 23, 1997. Available to approved sites. *by: stein@nrlmry.navy.mil*
55	12/31/96	Upgraded Server on Kelvin Upgraded web server to Netscape Enterprise V2.13 *by: kent@nrlmry.navy.mil*

Figure 35. What's New Page

5.6.9 CALENDAR

The **View Calendar** page (Figure 36) lists the upcoming meetings concerning MEL and other meetings of importance to the MEL development. The page also has links to the Terrain Modeling Project Office Calendar (**TMPO Calendar**), the Defense Modeling, Simulation, and Tactical Technology Information Analysis Center Calendar (**DMSTTIAC Calendar**), and the Data Technology Working Group Calendar (**DTWG Calendar**).

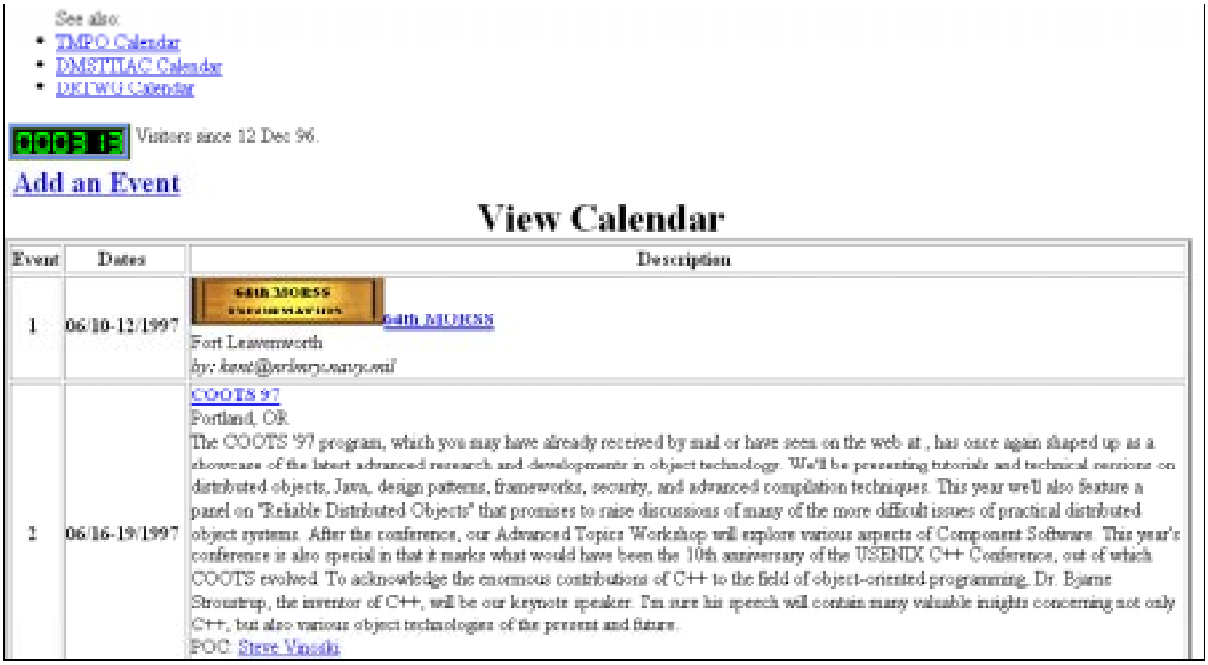


Figure 36. View Calendar Page

Additionally, the page allows the user to add to the MEL Calendar by selecting **Add an Event** and filling in and submitting with **Add New Event** on the **MEL Calendar Manager** page (Figure 37).

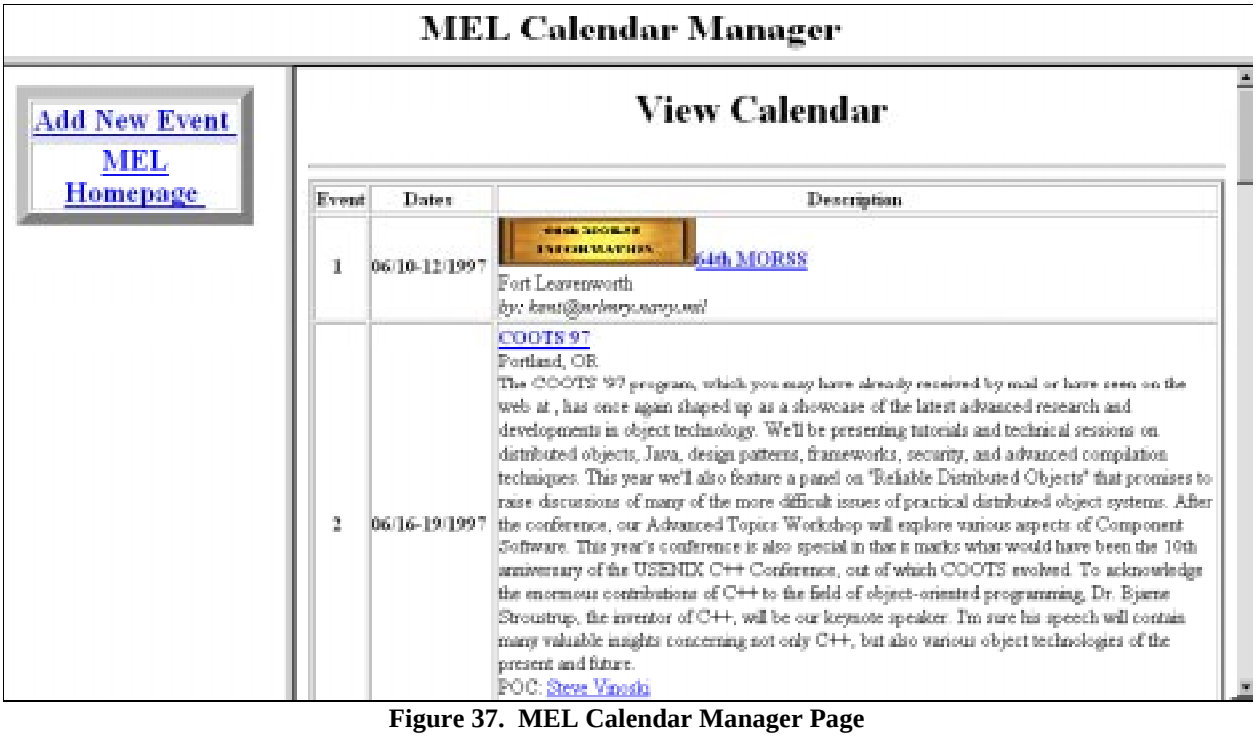


Figure 37. MEL Calendar Manager Page

5.6.10 METADATA VALIDATION SERVICE

The **Metadata Validation Service** (MVS) page (Figure 38) provides the capability for users to test their raw metadata files for compliance with required standards. The MVS page contains hyperlinks to:

a. A compiler for formal metadata

b. The personal home page for the author of the compiler

c. The FGDC Content Standards for Digital Geospatial Metadata

d. Specification for metadata encoding

The MVS page also provides a window where the URL of a raw metadata file can be entered. Clicking **Verify!** will check the format of the metadata file and provide output in the button selectable formats of:

a. HTML

b. text

c. SGML - Standard Generalized Markup Language

d. DIF - Data Interchange Format

The MVS page also provides hyperlinks to examples of raw metadata files.

Hyperlinks to the personal home pages for Metadata Validation Service contributors and to the Metadata Validation Service page author are provided, and a hyperlink back to the MEL Home page is standard on all pages.

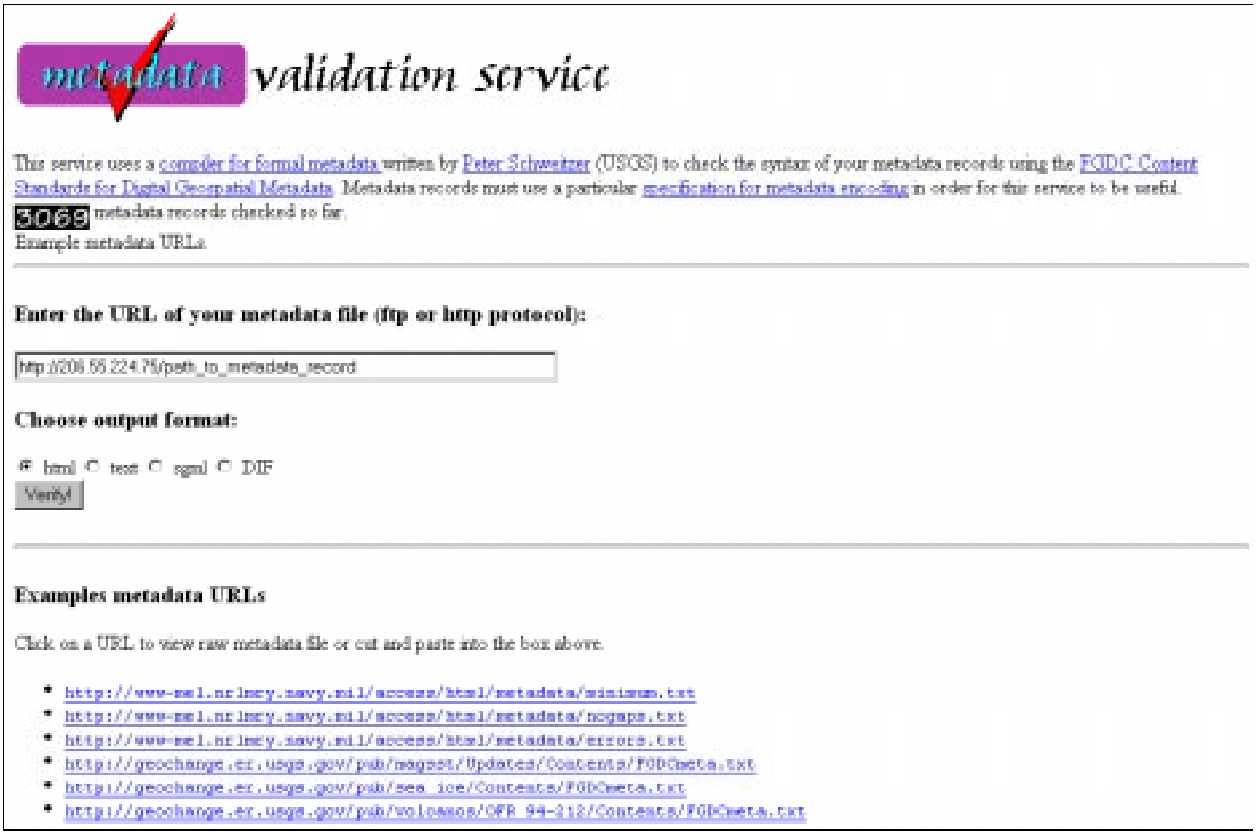


Figure 38. Metadata Validation Service Page

5.6.11 OTHER HOMEPAGES

The **Other Homepages** page (Figure 39) contains numerous hyperlinks to WWW sites with environmental and related information resources.

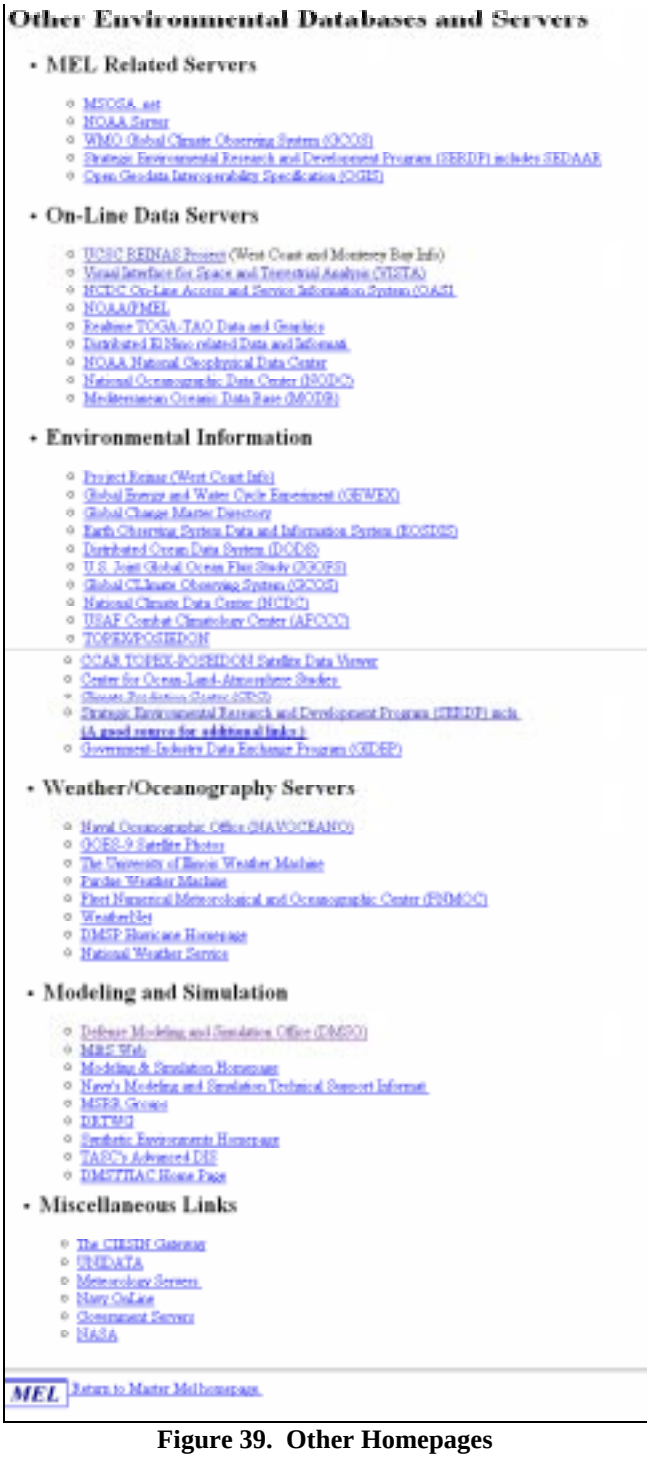


Figure 39. Other Homepages

Available hyperlinks are listed in the following paragraphs.

5.6.11.1 MEL RELATED SERVERS

a. MSOSA_net

b. National Oceanic and Atmospheric Administration (NOAA) Server

c. WMO Global Climate Observing System (GCOS)

d. Strategic Environmental Research and Development Program (SERDP) includes SEDAAR

e. Open Geodata Interoperability Specification (OGIS)

5.6.11.2 ONLINE DATA SERVERS

a. UCSC REINAS Project (West Coast and Monterey Bay Info)

b. Visual Interface for Space and Terrestrial Analysis (VISTA)

c. NCDC[7] Online Access and Service Information System (OASI)

d. NOAA/Pacific Marine Environmental Laboratory (PMEL) Thermal Modeling and Analysis Project

e. Real-time TOGA-TAO Data and Graphics

f. Distributed El Niño related Data and Information

g. NOAA National Geophysical Data Center

h. National Oceanographic Data Center (NODC)

i. Mediterranean Oceanic Data Base (MODB)

5.6.11.3 ENVIRONMENTAL INFORMATION

a. Project Reinas (West Coast Info)

b. Global Energy and Water Cycle Experiment (GEWEX)

c. Global Change Master Directory

d. Earth Observing System Data and Information System (ESOSDIS)

e. Distributed Ocean Data System (DODS)

f. Joint Global Ocean Flux Study (JGOFS)

g. Global CLImate Observing System (GCOS)

h. National Climatic Data Center (NCDC)

i. USAF Combat Climatology Center (AFCCC)

j. TOPEX/POSIEDON

[7] National Climatic Data Center

k. Colorado Center for Astrodynamic Research (CCAR) TOPEX-POSEIDON Satellite Data Viewer

l. Center for Ocean-Land-Atmosphere Studies

m. Climate Prediction Center (CPC)

n. Strategic Environmental Research and Development Program (SERDP) (A good source for additional links.)

o. Government-Industry Data Exchange Program (GIDEP)

5.6.11.4 WEATHER/OCEANOGRAPHY SERVERS

a. Naval Oceanographic Office (NAVOCEANO)

b. GOES-9 Satellite Photos

c. The University of Illinois Weather Machine

d. Purdue Weather Machine

e. Fleet Numerical Meteorology and Oceanography Center (FNMOC)

f. WeatherNet

g. DMSP Hurricane Home page

h. National Weather Service

5.6.11.5 MODELING AND SIMULATION

a. Defense Modeling and Simulation Office (DMSO)

b. M&S Web

c. Modeling & Simulation Home page

d. Navy's Modeling and Simulation Technical Support Information

e. MSRR Groups

f. DRTWG

g. Synthetic Environments Home page

h. TASC's Advanced Distributed Interactive Simulation (DIS)

i. Defense Modeling, Simulation, and Tactical Technology Information Analysis Center (DMSTTIAC) Home Page

5.6.11.6 MISCELLANEOUS LINKS

a. The Consortium for International Earth Science Information Network (CIESIN) Gateway

b. UNIDATA

c. Meteorology Servers

d. TARGET = "_top" Navy Online

e. Government Servers

f. National Aeronautics and Space Administration (NASA)

5.6.12 MEL PGP KEYS

For those requiring a secure transfer of their data requests, the MEL has the capability of using PGP for encrypted data transfers. Users must download and install PGP if they wish to use this security feature.

The MEL **PGP Registration and Order Form** (Figure 40) allows the user to enter an e-mail address to be automatically informed of updates. A **To the PGP Keys** button accesses an **Index of PGP Keys** page of hyperlinks to the PGP Public Key Blocks for a number of MEL system computers and PoCs.

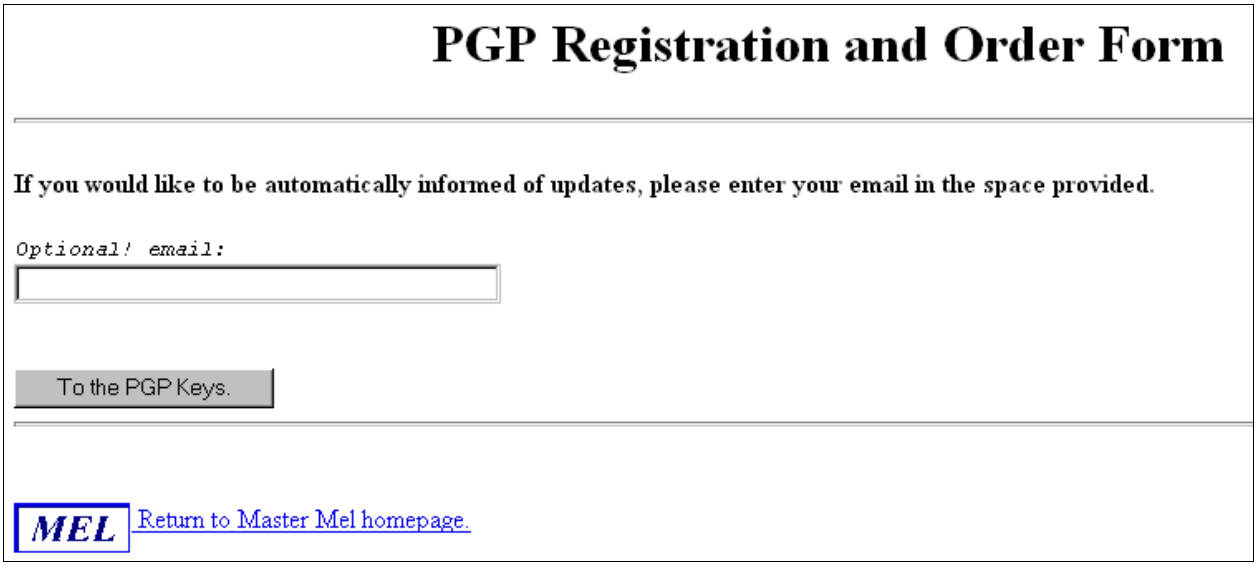


Figure 40. MEL PGP Registration & Order Form

5.6.13 DEVELOPER'S CORNER

The **Developer's Corner** page (Figure 41) is a restricted-access area for users who are actively participating in the development and maintenance of the MEL. If not already authorized access to Developer's Corner, access permission may be requested by e-mail to the **MEL System Administrator**.

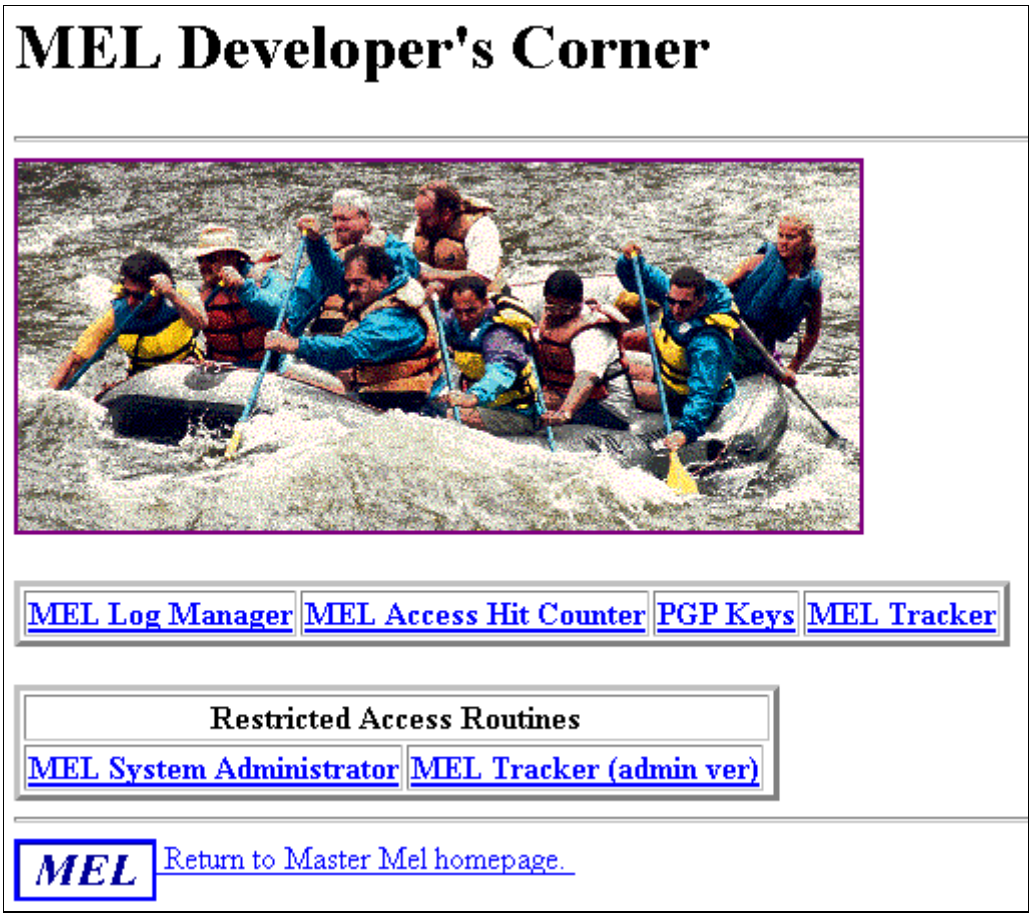


Figure 41. Developer's Corner Page

5.7 COMMENTS? PROCESSING PROCEDURES

The **Comments?** hyperlink from the MEL Home page (Figure 3) produces an e-mail form directed to the MEL System Administrator on which comments, questions, or other matters concerning MEL can be submitted.

5.8 SECONDARY HYPERLINKS

The six secondary hyperlinks on the MEL Home page provide additional administrative information about the MEL oversight, sponsor, usage, and PoCs.

5.6.1 DISCLAIMER PAGE

The MEL is a DoD automated information system. The Disclaimer page describes the security and monitoring agreements to which the MEL user is subject.

All DoD telecommunications and automated information systems and related equipment are for the communication, transmission, processing, and storage of US Government information only. The systems and equipment are subject to authorized monitoring to ensure proper functioning, to protect against unauthorized use, and to verify the presence and performance of applicable security features. Such monitoring may result in the acquisition, recording, and analysis of all data being communicated, transmitted, processed, or stored in this system by a user. If monitoring reveals possible evidence of criminal activity, such evidence may be provided to law enforcement personnel. Anyone using the MEL system expressly consents to such monitoring.

5.6.2 DMSO HOME PAGE

The DMSO Home page provides a more detailed description of the MEL sponsoring organization and hyperlinks to additional DMSO resources.

5.6.3 MEL USAGE STATISTICS

The NRL Server Statistics Home page provides a graphical display of the total number of access "hits" to the MEL per day (top graph) as well as the number of MEL Home page accesses per day (bottom graph).

5.6.3.1 MONTHLY USAGE REPORTS

More detailed information is provided by the hyperlinks at the bottom of the NRL Server Statistics Home page. These link to a page of hyperlinks to the statistics for each day of that month.

5.6.3.2 DAILY USAGE REPORTS

The NRL Server Statistics for individual days are given as a total number of accesses to the MEL as well as a number of MEL Home page accesses with the former also presented hourly in both graphical and tabular form. The Table includes the number of accesses as well as the total number of bytes transferred and the average bit and byte transfer rate for each hour.

Accompanying pie charts and tables describe:

a. The forty most accessed MEL URLs on that date along with the number of accesses for each URL and the total number of bytes delivered from that URL

b. The forty most active Users on that date along with the number of accesses for each user and the total number of bytes delivered to that user

c. The ten most active Internet Domains on that date along with the number of accesses for each Domain and the total number of bytes delivered to that Domain

d. The success/failure statistics on that date with statistics for the most common failure modes

e. The ten documents most commonly unlocatable on that date with the number of failures for each document

5.6.4 MEL POINTS-OF-CONTACT

Three hyperlinks to e-mail forms are provided on the MEL home page for contacting: 1) the public release approval official, 2) the Technical PoC, and 3) the Webmaster.

APPENDIX A. TUTORIAL

A.1 HTML QUERY

1. Log on to the WWW and open the URL for the NRL Monterey Access Site: ***http://www-mel.nrlmry.navy.mil***
2. Select **HTML Query**
3. Leave the **Zoom Factor** as 2x.
4. Click on the center point of the Region of Interest. (Example: San Francisco Bay Area at -120 degrees longitude, +40 degrees latitude, repeat, repeat -- larger zoom factors may be used in preference to repeating the 2x zoom factor. Then click on the center of the San Francisco Bay, repeat, repeat -- larger zoom factors may be used in preference to repeating the 2x zoom factor.)
5. Specify **Time Range** of interest giving minimum and maximum dates. Select months from the available list and type the dates and years in the text entry boxes provided. (Example: min date: Jan 1 <current year>, max date: <current date>)
6. Specify **Keywords** in the Keyword text entry box. (Example: wind)
7. Select a MEL Resource Site Server either by leaving the default value of **All**, or by selecting **Specific** and highlighting the Resource Site Server of interest in the adjacent list. Note: a second click will toggle off a previously highlighted MRSS. (Example: Leave the default as **All**.)
8. Select **Submit Query**.
9. The submitted query will return all metadata records that contain information matching your request as well as a graphical display of the spatial region covered by each dataset. Select the set which is most suitable for your needs. (Example: Click on **GOES 9**.)
10. A detailed metadata record description of the dataset is provided with the option of ordering the desired dataset through the **Generate Order Form** button. (Example: Click **Generate Order Form**.)
11. A data request form is provided where the previously provided temporal and spatial specifications are repeated. At this time it is possible to modify the previous specifications. When the specifications are correct the delivery parameters can be specified through the **User Profile**. (Example: Click **Load User Profile**.)

12. As a new user enter your e-mail address and your selected password in the windows provided. (Example: Enter your e-mail address in the top window, and preferred password in BOTH the middle window and bottom window. Click **Create Profile**. [Note: If you wish to change your profile, enter your password in only the middle window and click on the **Change Profile** button. If you wish to use a previously created profile, enter only your e-mail address.] Click the **Load** button to load your profile and return to the Data Request Form.)
13. [If it is necessary to create a profile or to change a profile, fill in the **User Profile Form** with appropriate information and choose options from the available menus. (Example: Name: <your name>; Email: <your e-mail address>; Delivery Method: <FTP delivery>; Confirmation: <EMAIL>; PGP Encrypt Data: <Don't PGP encrypt my data>; Delivery URL: <ftp://your computer net address/your incoming directory>; Organization: <your organization>; Project: <your project name>; Phone: <your phone number>; Fax: <your fax number> Street (two windows available): <your street address>; City: <your city>; State: <your state>; Zip: <your zip code, 9-digit zip accepted>; PGP key:<your pgp public key>. Then click **Add/Update Profile** and you will return automatically to the Data Request Form.]
14. Check your **Delivery Info** and, if incorrect, use **Change Delivery**.
15. Specify the desired **Request Type**. (Example: **Get Now**)
16. If all parameters are proper, submit your order. (Example: Click **Submit Order**)
17. You will receive a **MEL Data Request Acknowledgment** on your Web Browser and the data will be delivered to the location and in the manner you have requested. You may review the order in detail by using the **See text of order** button (Example: Click **See text of order**)
18. Use the **HTML Query** hyperlink to return to the **MEL Query** page and the **MEL** icon at the bottom of the page to return to the **MEL Home page**.

A.2 JAVA QUERY

1. Log on to the WWW and open the URL for the NRL Monterey Access Site: ***http://www-mel.nrlmry.navy.mil***
2. Select **JAVA Query**
3. Leave the top tab as **Spatial** and move the mouse cursor to the north-west of the region of interest. (Example: Move the cursor to the north west of the San Francisco Bay Area.)
4. Press and hold the mouse select button and drag it to the south-west of the region of interest. (Example: Holding the mouse select button, drag the cursor to the south-west of the San Francisco Bay Area .)
5. Select the top tab as **Temporal** and specify the time range of interest. (Example: Select **Relative** and use **Predefined Date Ranges** to select **Current Year.)**
6. Select top tab as **Keywords** and select the **Categories, Thesauri,** and **Keywords** of interest. (Example: Select **Themes, NEONS satellite,** and **mn w wnd spd**.)

7. Select top tab as **Servers** and select the MEL Resource Site Servers (MRSS) of interest. Note: a second click will toggle off a previously highlighted MRSS. (Example: Select **Select All.**)
8. Select **Submit Query**.
9. The submitted query will spawn a new Web Browser listing all metadata records that contain information matching your request as well as a graphical display of the spatial region covered by each dataset. Select the set which is most suitable for your needs and inspect the associated metadata record. (Example: Select **GOES_9 Latest winds remote-sensing image Eastern Pacific** and select **metadata**.)
10. A new Web Browser is spawned with a detailed metadata record description of the dataset and the option of ordering the desired dataset through the **Generate Order Form** button. (Example: Select **Generate Order Form**.)
11. A new Web Browser is spawned with a data request form where the previously provided temporal and spatial specifications are repeated. At this time it is possible to modify the previous specifications. When the specifications are correct the delivery parameters can be specified through the **User Profile**. (Example: Click **Load User Profile**.)
12. As a new user enter your e-mail address and your selected password in the windows provided. (Example: Enter your e-mail address in the top window, and preferred password in BOTH the middle window and bottom window. Click **Create Profile**. [Note: If you wish to change your profile, enter your password in only the middle window and click on the **Change Profile** button. If you wish to use a previously created profile, enter only your e-mail address.] Click the **Load** button to load your profile and return to the Data Request Form.)

> **NOTE:** If it is necessary to create a profile or to change a profile, fill in the **User Profile Form** with appropriate information and choose options from the available menus. Then click **Add/Update Profile** and you will return automatically to the Data Request Form.

13. Check your **Delivery Info** and, if incorrect, use **Change Delivery**.
14. Specify the desired **Request Type**. (Example: **Get Now**)
15. If all parameters are proper, submit your order. (Example: Click **Submit Order**)
16. You will receive a **MEL Data Request Acknowledgment** on your Web Browser and the data will be delivered to the location and in the manner you have requested. You may review the order in detail by using the **See text of order** button (Example: Click **See text of order**)
17. Use the **JAVA Query** hyperlink to return to the **MEL Query** page and the **MEL Home page** hyperlink at the top of the page to return to the **MEL Home page**.

APPENDIX B. ACRONYMS/ABBREVIATIONS

A

AFCCC..... Air Force Combat Climatology Center

AFGWC ..... Air Force Global Weather Center

API..... Application Programming Interface

ARL ..... Army Research Laboratory

B

BUFR..... Binary Universal Form for the Representation of meteorological data

C

C4I ..... Command, Control, Communications, Computers, and Intelligence

CAST..... Center for Air Sea Technology of the Mississippi State

CCAR..... Colorado Center for Astrodynamic Research

CCC..... Combat Climatology Center (see AFCCC)

CDF ..... Common Data Format

CD-ROM..... Compact Disk, Read Only Memory

CGI..... Common Gateway Interface

CHL..... Coastal and Hydraulics Laboratory

CIESIN..... Consortium for International Earth Science Information Network

CNMOC ..... Commander, Naval Meteorology & Oceanography Command

COTS..... Commercial Off-The-Shelf

D

DBMS..... DataBase Management System

DDR&E..... Director, Defense Research and Engineering

DIF..... Data Interchange Format

DIS..... Defense Information System

DIS..... Distributed Interactive Simulation (TASC, Inc.)

DMAMUSE ..... Defense Mapping Agency Mapping, charting, and geodesy Utility SoftwarE (MUSE 1.1, DMAMUSE 2.0)

DMSO..... Defense Modeling and Simulation Office

DMSP ..... Defense Meteorological Satellite Program

DMSTTIAC..... Defense Modeling, Simulation, and Tactical Technology Information Analysis Center

DoD..... Department of Defense

DoDAAC ..... DoD Activity Address Code

E

EA..... Executive Agent

E-mail..... Electronic mail

EOS..... Earth Observing System

EOSDIS (DAAC)..... Earth Observing System Data and Information System (Distributed Active Archive Center)

EXCIMS..... Executive Council on Modeling & Simulation

F

FAQ ..... Frequently Asked Questions

FGDC ..... Federal Geospatial Data Committee

FNMOC..... Fleet Numerical Meteorology and Oceanography Center

FTP ..... File Transfer Protocol

G

GCOS ..... Global Climate Observing System

GDEM ..... Generalized Digital Environmental Model

GEWEX ..... Global Energy and Water Cycle Experiment

GIDEP..... Government-Industry Data Exchange Program

GIF..... Graphic Information Format

GMT ..... Greenwich Mean Time

GOTS ..... Government Off-The-Shelf

GRIB ..... GRid In Binary

GUI..... Graphical User Interface

GZIP, GUNZIP ..... Commercial file compression, uncompression format product

H

HCI ..... Human Computer Interface

HDF ..... Hierarchical Data Format

HTML ..... HyperText Markup Language

HTTP ..... Hypertext Transfer Protocol

I

IDL ..... Interface Design Language

IP ..... Internet Protocol

J

JGOFS ..... Joint Global Ocean Flux Study

K-L-M

M&S ..... Modeling and Simulation

MASS ..... MEL Access Site Software

MC&G ..... Mapping, Charting, and Geodysy

MEL ..... Master Environmental Library

METOC ..... METeorology and OCeanography

MODB ..... Mediterranean Oceanic Data Base

MRSS ..... MEL Resource Site Software

MSEA ..... Modeling and Simulation Executive Agent

MSOSA ..... Modeling and Simulation Operational Support Activity

MSRCs ..... Major Shared Resource Centers

MSRR ..... Modeling and Simulation Resource Repository

MSU-CAST ..... Mississippi State University Center for Air Sea Technology (see CAST)

MUSE ..... Mapping, charting, and geodesy Utility SoftwarE (see DMAMUSE)

MVS ..... Metadata Validation Service

N

NASA ..... National Aeronautics and Space Administration

NAVO, NAVOCEANO..... Naval Oceanographic Office

NCDC..... National Climatic Data Center

NCSA..... National Center for Supercomputer Applications

NEONS..... Naval Environmental Operational Nowcasting System

NGDC..... National Geophysical Data Center

NIMA ..... National Imagery and Mapping Agency (formerly DMA)

NITFS..... National Imagery Transmission Format Standards

NMOC..... Naval Meteorology & Oceanography Command (see CNMOC)

NOAA..... National Oceanic and Atmospheric Administration

NODC..... National Oceanographic Data Center

NOGAPS..... Navy Operational Global Atmospheric Prediction System

NORAPS ..... Navy Operational Regional Atmospheric Prediction System

NRL-DC ..... Naval Research Laboratory -- Washington, DC

NRL-MRY ..... Naval Research Laboratory -- Monterey, CA, Marine Meteorology Division Code 7500

NRL-SSC ..... Naval Research Laboratory -- Stennis Space Center, MS

NSDI..... National Spatial Data Infrastructure

NSF ..... National Science Foundation

NSSDC ..... National Space Science Data Center

NWS ..... National Weather Service

O

OASI..... Online Access and Service Information System

OGIS..... Open Geodata Interoperability Specification

OUSD(A&T)..... Office of the Under Secretary of Defense for Acquisition and Technology

P

Perl..... (formerly Practical Extraction and Report Language) an interpreted computer language

PGP..... Pretty Good™ Privacy

PL ..... USAF Phillips Laboratory

PMEL..... Pacific Marine Environmental Laboratory

PoC ..... Point of Contact

PO.DAAC..... Physical Oceanography Distributed Active Archive Center

Q-R

R&D ..... Research and Development

RDBMS ..... Relational Data Base Management System

RoI ..... Region of Interest

RRH..... Resource Request Handler (see also MRRH)

RSS ..... Resource Site Software (see also MRSS)

S

SDBF ..... Simulator Data Base Facility

SERDP ..... Strategic Environmental Research and Development Program

SGML..... Standard Generalized Markup Language

SRoI..... Spatial Region of Interest

STIP..... Scientific and Technical Information Program

SUM..... Software User's Manual

SWMO ..... Smart Weapons Management Office (see AMC-SWMO)

T

TAR..... Unix archive file format

TEC ..... Topographic Engineering Center

TMPO..... Terrain Modeling Project Office

TOWAN..... Tactical Oceanography Wide Area Network

TRoI ..... Temporal Range of Interest

TTD ..... Tactical Terrain Data [see Interim Terrain Data (ITD)

U

UCSC..... University of California at Santa Cruz

UID ..... User Identification

URL ..... Universal Resource Locator

USACE..... United States Army Corps of Engineers

USAF ..... United States Air Force

USD(A&T) ..... Under Secretary of Defense for Acquisition and Technology (see OUSD(A&T))

V

VISTA ..... Visual Interface for Space and Terrestrial Analysis

VPF ..... Vector Product Format

W

WAIS ..... Wide Area Information Server

WAM ..... WAve Model

WMO ..... World Meteorological Organization

WWW ..... World Wide Web

X-Y-Z

APPENDIX C. GLOSSARY

A

Access Site..... The second tier of the MEL provides query, results, and order interface along with the Resource Site order parser, access control, and job scheduler.

ADRG..... ARC Digitized Raster Graphics are digital raster representations of paper graphic products. Maps/charts are converted into digital data by raster scanning and transforming the map image into the ARC system frame of reference. Data collected from a single chart/map series and scale will be maintained as a worldwide seamless data base of raster graphic data with each pixel having a distinct geographic location.

ADRI ..... ARC Digital Raster Imagery is digital imagery produced to support various Air Force weapons and mission support systems. A joint requirement has been recognized, and is being documented, for a broad-area Controlled Image Base (CIB).

AFCCC..... Air Force Combat Climatology Center develops and produces special weather-impact information used in a) planning and executing worldwide operations of the military services, unified commands, and allied nations, b) engineering, design, and deployment of weapon systems, c) weather sensitive, multi-billion dollar national programs controlled by the Secretary of the Air Force, and d) DoD lead for air and space weather modelling and simulation.

AFGWC ..... Air Force Global Weather Center has the mission to build the world's most comprehensive data base and apply this information in real-time to satisfy the operational requirements of the national command authorities, DoD, combat forces of the Air Force and Army, and multi-billion dollar weather sensitive AF Precedence 1-1 programs controlled by the Secretary of the Air Force.

Air Force..... (see USAF).

Applets ..... An applet is a small program that runs within another host program. For example, the MEL JAVA Query program downloads Java applets across the network to run within the Web browser on a user's computer.

ARL..... Army Research Laboratory executes fundamental and applied research to provide the Army the key technologies and analytical support necessary to assure supremacy in future land warfare.

Army..... (see US Army).

B

BUFR..... Binary Universal Form for the Representation of meteorological data by the World Meteorological Organization (WMO) is a binary code designed to represent meteorological data employing a continuous binary stream.

Byte..... eight (8) bits

C

CAST..... Center for Air Sea Technology of the Mississippi State University (a.k.a. MSU-CAST) places emphasis on application of numerical ocean models and modelling techniques toward realistic simulation of ocean conditions, particularly the physical and dynamical state of coastal waters and semi-enclosed seas. Although the primary focus is on oceanography, CAST has expanded its efforts to coupled air-ocean modelling and supports the acquisition, storage, and application of meteorological data of all kinds.

CDF ..... Common Data Format of the National Space Science Data Center (NSSDC) is a self-describing data abstraction for the storage and manipulation of multi-dimensional data in a discipline independent fashion.

CIB ..... Controlled Image Base is unclassified panchromatic (black and white) digital imagery produced to support a variety of mission planning and command, control, communications, and intelligence systems. CIB is a compressed and National Imagery Transmission Format Standard (NITFS)-compliant outgrowth of ARC Digital Raster Imagery (ADRI).

CIESIN..... Consortium for International Earth Science Information Network (pronounced "season") was established in 1989 in response to a directive by the United States Congress and is dedicated to furthering the interdisciplinary study of global environmental change. CIESIN is agency-neutral, specializing in the access and integration of physical, natural, and socioeconomic information across scientific disciplines.

CNMOC ..... Commander, Naval Meteorology & Oceanography Command has the mission to collect, interpret and apply global data and information for safety at sea, strategic and tactical warfare, and weapons system design, development and deployment. The command provides meteorological, oceanographic, and mapping, charting and geodesy services to increase the effectiveness of our Navy in both peacetime and in war.

CPC ..... Climate Prediction Center has the mission to maintain a continuous watch on short-term climate fluctuations and to diagnose and predict them. These efforts are designed to assist agencies both inside and outside the federal government in coping with such climate related problems as food supply, energy allocation, and water resources.

D

DDR&E..... Director, Defense Research and Engineering is the principal staff assistance and advisor to the Under Secretary of Defense for Acquisition and Technology (USD(A&T); see OUSD(A&T)) for DoD scientific and technical matters, basic and applied research, and advanced technology development.

DMA..... Defense Mapping Agency is now the National Imagery and Mapping Agency (NIMA).

DMAMUSE ..... Defense Mapping Agency (DMA, now NIMA) Mapping, charting, and geodesy Utility SoftwarE (MUSE 1.1, DMAMUSE 2.0) project is the result of an initiative of the DMA to provide computer software support to its mission areas. The goals of DMAMUSE include the display and manipulation of DMA's digital map data products, interfacing these products to mainstream commercial software, and providing standard data transformation and coordinate conversions. DMAMUSE is a software development environment configured from international, national, and de facto standards which supports software interoperability across many computer platforms.

DMSO..... Defense Modeling and Simulation Office provides a full time focal point for information concerning DoD Modeling and Simulation (M&S) activities. Currently the DMSO promulgates M&S policy, initiatives, and guidance to promote cooperation among DoD components to maximize efficiency and effectiveness.

DMSP ..... Defense Meteorological Satellite Program is a Department of Defense (DoD) program run by the Air Force. The DMSP program designs, builds, launches, and maintains several near polar orbiting, sun synchronous satellites monitoring the meteorological, oceanographic, and solar-terrestrial physics environments.

DMSTTIAC..... Defense Modeling, Simulation, and Tactical Technology Information Analysis Center is a member of the Defense Technical Information Center (DTIC) Information Resource Web of Information Analysis Centers (IACs). DMSTTIAC is sponsored by DTIC and the Defense Modeling and Simulation Office (DMSO) and is supported by the Army Materiel Command-Smart Weapons Management Office (AMC-SWMO) and the Office of Under Secretary of Defense Acquisition and Technology (OUSD(A&T)). DMSTTIAC is established to access, acquire, collect, analyze, synthesize, generate, and disseminate scientific and technical information in the area of modeling and simulation, tactical warfare technology, test and evaluation, and special operations forces in order to a) support the DoD research, development, test and acquisition activities, b) assist DoD components/offices, other government agencies, academia, government contractors, and U.S. industry as authorized, in the analysis and dissemination of information within the DoD modeling and simulation, tactical warfare technology, test and evaluation, and special operation force areas, and c) promote the exchange of technical information within the DMSTTIAC subject areas throughout DoD's research, development and acquisition communities.

DTED ..... Digital Terrain Elevation Data is provided by DMA (see NIMA) on a CD-ROM. Its main purpose is to provide elevation heights that are represented in the Latitude/Longitude coordinate system.

DTIC..... Defense Technical Information Center is a major component of the DoD Scientific and Technical Information Program (STIP) within the Office of the Under Secretary of Defense for Acquisition and Technology (OUSD(A&T)) and reports directly to the Director, Defense Research and Engineering (DDR&E). DTIC provides information -- records of planned, ongoing, or completed Defense-related research -- to U.S. Government agencies and their contractors.

DTWG..... Data Technology Working Group is a data standards working group operating as part of the Modeling and Simulation Resource Repository (MSRR).

E

EA..... Executive Agent, also known as Modeling and Simulation (M&S) Executive Agent (MSEA), is a DoD component to whom the Office of Under Secretary of Defense Acquisition and Technology (OUSD(A&T)) has assigned responsibility and delegated authority for the development and maintenance of a specific area of M&S application, including standards and databases, used by or common to many models and simulations. The MEL project is directed by EAs for Air and Space, Oceans, and Terrain.

EOS..... Earth Observing System, part of the NASA Mission to Planet Earth.

EOSDIS (DAAC) .... Earth Observing System Data and Information System (Distributed Active Archive Center) provides links to all EOS DAAC sites that are running WWW servers.

EXCIMS..... Executive Council on Modeling & Simulation has the mission to advise and assist the Under Secretary of Defense for Acquisition and Technology (USD(A&T)) in strengthening the uses of Modeling and Simulation (M&S) in the DoD.

F

FGDC ..... Federal Geospatial Data Committee has assumed leadership in the evolution of the National Spatial Data Infrastructure (NSDI) in cooperation with state and local governments, academia and the private sector to establish policies, standards, and procedures for organizations to cooperatively produce and share geospatial data.

FNMOC..... Fleet Numerical Meteorology and Oceanography Center is primary Navy operational processing center for Meteorological and Oceanographic (METOC) analyses and predictions. It is one of the internationally recognized operational centers for global and regional atmospheric models, and is widely acclaimed as the world's leader in producing global oceanographic and coupled air-ocean models operationally. FNMOC products support naval warfare, and maritime and aviation safety and efficiency for both DoD and civil interests such as US Coast Guard search and rescue planners.

G

GOES ..... Geosynchronous Operational Environmental Satellite is a basic element of U.S. weather monitoring and forecast operations and is a key component of NOAA's National Weather Service (NWS) operations and modernization program. Spacecraft and ground-based systems work together to accomplish the GOES mission of providing weather imagery and quantitative sounding data that form a continuous and reliable stream of environmental information used for weather forecasting and related services.

GRIB ..... GRid In Binary is a standard data format for meteorological data established by the World Meteorological Organization (WMO).

GUI ..... Graphical User Interface provides a primarily picture-based interface between a computer and its user.

H

HDF ..... Hierarchical Data Format is a National Center for Supercomputing Applications (NCSA) library and platform independent format for the exchange of scientific data. It includes Fortran and C calling interfaces and utilities for analyzing and converting HDF data files.

HTML ..... Hyper-Text Markup Language is a computer language specifically designed for use with World Wide Web (WWW) browsers (see Web Browser) which allows for active "hyper-links" to other parts of the WWW.

HTTP..... Hypertext Transfer Protocol is a communications protocol commonly used on the World Wide Web (WWW).

Hyperlink..... Highlighted, underlined, or otherwise emphasized text on a World Wide Web (WWW) page which when activated, normally by the click of a mouse button, provides contact to other sources of information on the WWW.

I

IACs..... Information Analysis Centers are reference tools for researchers, program managers, and others interested in using existing information to a) identify appropriate sources of valuable scientific and technical information, b) seek specific responses to questions requiring knowledge and experience in specialized areas of technology, c) check background data and information to avoid unnecessary duplication of research, development, test, or evaluation activities, d) obtain customized information products or services, and e) develop broad awareness of the capabilities, products, and services offered by the 25 IACs supported by DoD.

Internet..... The web of digital communications links which allows access to computer-based data world-wide. Electronic mail (e-mail), File Transfer Protocol (FTP), and the World Wide Web (WWW) are three principal capabilities of the Internet.

Internet Explorer .... Internet Explorer™ is a commercial Web Browser from Microsoft Corporation.

ISO..... International Organization for Standardization is a worldwide federation of national standards bodies from some 100 countries. The mission of ISO is to promote the development of standardization and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing cooperation in the spheres of intellectual, scientific, technological and economic activity.

ITD ..... Interim Terrain Data is designed to provide digital terrain analysis data for systems being fielded prior to DMA (see NIMA) production of Tactical Terrain Data (TTD) on the Digital Production System. It consists of contiguous digital data sets covering specified geographic areas. ITD can be used in conjunction with Digital Terrain Elevation Data (DTED), ARC Digitized Raster Graphic (ADRG) base maps, and Video Disc base maps. ITD on CD-ROM is being developed to satisfy Service requirements for a terrain analysis data set that is machine readable and provided on a compact and stable storage media, and has been updated to conform to Vector Product Format (VPF).

J

Java..... JAVA™ is a commercial (Sunsoft), hardware independent, computing platform upon which software developers can build applications.

K-L-M

Marine Corps ..... (see US Marine Corps).

MEL ..... Master Environmental Library (*http://www-mel.nrlmry.navy.mil*) is a Defense Modeling and Simulation Office (DMSO) project which is sponsored by the Environmental Agents (EAs) for Air and Space, Oceanography, and Terrain. The mission of the MEL project initially is to support the warfighter and national decision makers, with eventual outreach to the non-DoD and commercial communities, through direct and timely access to natural environmental information, products and data that support a common interoperable view of the battlespace and help ensure battlespace dominance, and the supply of natural environmental information, products and data to models and simulations for planning, training, development and acquisition.

Metadata ..... A dataset which describes the properties of other datasets.

Mosaic ..... Mosaic is a free Web Browser developed and supported by the National Center for Supercomputer Applications (NCSA) until 7 January 1997.

MSEA ..... Modeling and Simulation Executive Agent (see EAs) is a DoD component to whom the Under Secretary of Defense for Acquisition & Technology (see OUSD(A&T) has assigned responsibility and delegated authority for the development and maintenance of a specific area of Modeling & Simulation (M&S) application, including relevant standards and databases, used by or common to many models and simulations.

MSOSA ..... Modeling and Simulation Operational Support Activity is a part of the Modeling and Simulation Resource Repository (MSRR) project which is developing a database containing Modeling and Simulation (M&S) operational information and a set of Web-available access tools.

MSRCs ..... Major Shared Resource Centers operate large High Performance Computing (HPC and HPCMP) systems available to the entire DoD community.

MSRR ..... Modeling and Simulation Resource Repository is envisioned as a collection of computer resources and information which will assist the Modeling and Simulation (M&S) community in communication and information sharing. The MSRR Project is sponsored by the Defense Modeling and Simulation Office (DMSO).

N

NAVOCEANO ..... Naval Oceanographic Office has the mission of providing specialized and unique oceanographic products and services to joint warfighters in a manner and timeframe that allows them to meet their objectives.

Navy..... (see US Navy).

NCSA..... National Center for Supercomputer Applications is a university-based, high-performance computing facility and research center designed to serve the national computational science and engineering community. Located at the University of Illinois at Urbana-Champaign, NCSA is funded by the National Science Foundation (NSF), other federal agencies, the State of Illinois, the University of Illinois, and industrial corporations collaborating through partnership agreements.

NcView ..... NcView is a visual browser for NetCDF format files.

NEONS..... Naval Environmental Operational Nowcasting System provides the capability to manage oceanographic and meteorological data in near real-time. It is a software package that provides a set of tools to access, create, and manage environmental data which is stored in a NEONS schema within a relational database.

NetCDF ..... Network Common Data Form is an interface for scientific data access and a library that provides an implementation of the interface. The NetCDF library also defines a machine-independent format for representing scientific data. Together, the interface, library, and format support the creation, access, and sharing of scientific data.

Netscape Navigator . Netscape Navigator™ is a commercial Web Browser from Netscape Corporation.

NGDC..... National Geophysical Data Center manages environmental data in the fields of marine geology and geophysics, paleoclimatology, solar-terrestrial physics, solid earth geophysics, and glaciology (snow and ice).

NIMA ..... National Imagery and Mapping Agency (formerly DMA) has central responsibility for imagery and mapping with the mission of providing timely, relevant, and accurate imagery intelligence, and geospatial information in support of national security objectives.

NITFS..... National Imagery Transmission Format Standards are designed to permit the transmission of a file composed of an image accompanied by subimages, symbols, labels, text, and other information that relate to the image. One of the main features of the NITFS is that it allows several items of each data type to be included in one file, yet any data types may be omitted.

NOAA..... National Oceanic and Atmospheric Administration has the mission to describe and predict changes in the Earth's environment, and conserve and manage wisely the Nation's coastal and marine resources to ensure sustainable economic opportunities.

NOGAPS..... Navy Operational Global Atmospheric Prediction System is a global spectral numerical weather prediction model. It employs state-of-the-art data quality control, data assimilation, nonlinear normal mode initialization, and atmospheric physics to produce skillful medium-range weather forecasts. NOGAPS generates several thousand operational fields per day, including surface winds and heat fluxes to drive ocean models and lateral boundary conditions to support regional atmospheric models.

NORAPS..... Navy Operational Regional Atmospheric Prediction System is a relocatable regional primitive equation numerical weather prediction model. It is run at higher horizontal and vertical resolution than NOGAPS for areas of high DoD interest. It can be initialized either from its own high-resolution nowcast, or from the coarser resolution NOGAPS nowcast. It uses lateral boundary conditions provided by NOGAPS and generally provides a more accurate and detailed depiction of mesoscale weather features than NOGAPS, particularly in areas affected by the land surface.

NRL-DC..... Naval Research Laboratory -- Washington, DC is the Navy's corporate research and development laboratory, created in 1923 by Congress for the Department of the Navy on the advice of Thomas Edison. The Laboratory has over 4000 personnel (over 1500 full-time scientists, engineers and SES employees - more than half of these PhDs, currently including a Nobel Laureate), who address basic research issues concerning the Navy's environment of sea, sky, and space.

NRL-MRY..... Naval Research Laboratory -- Monterey, CA, Marine Meteorology Division Code 7500, is the only scientific center in the Navy wholly dedicated to atmospheric research. NRL-MRY is responsible for conducting research and development to provide objective local, regional and global atmospheric analysis and prediction as well as the development of automated weather interpretation systems to support Naval operations.

NRL-SSC ..... Naval Research Laboratory -- Stennis Space Center, MS, a tenant activity at NASA's Stennis Space Center (NASA -- SSC), is located in the southwest corner of Mississippi. Facilities include a number of large antennas to receive available oceanographic and meteorological satellite data, a Magnetic Observatory building constructed of nonferrous materials in an electromagnetically quiet area of SSC, a Pattern Analysis Laboratory, a Map Data Formatting Facility, a water-wave channel, and numerous laboratories for acoustic and oceanographic computation, instrumentation, analysis, and testing.

NSDI..... National Spatial Data Infrastructure is conceived to be an umbrella of policies, standards, and procedures under which organizations and technologies interact to foster more efficient use, management, and production of geospatial data. The NSDI requires, and will facilitate, cooperation and interaction among various levels of government, the private sector, and academia.

NSSDC ..... National Space Science Data Center provides access to a wide variety of astrophysics, space physics, lunar and planetary data from NASA space flight missions in addition to selected other data and some models and software.

NWS ..... National Weather Service, is the component of NOAA which maintains a constant watch for life-threatening situations from weather such as hurricanes, tornadoes, winter storms, and floods.

O

OUSD(A&T) ..... Office of the Under Secretary of Defense for Acquisition and Technology is the part of DoD concerned with the purchase and sale of all items which DoD uses. It is also concerned with developing advanced technology and assessing the impact of DoD on the environment and the civilian world.

P

Perl..... An interpreted computer language optimized for scanning arbitrary text files, extracting information from those text files, and printing reports based on that information. Perl is also a good language for many system management tasks.

PGP..... Pretty Good™ Privacy is a publicly available, high security cyptographic software application which allows people to exchange messages with both privacy and authentication. MIT distributes PGP free for non-commercial use.

PL ..... USAF Phillips Laboratory has the mission to create technologies for the warfighter to control and exploit space. The Air Force's Phillips Laboratory is headquartered at Kirkland AFB, NM, and has locations at Hanscom AFB, MA and Edwards AFB, CA. It is part of Air Force Materiel Command and reports to and supports the Space and Missile Systems Center at Los Angeles AFB, CA.

PO.DAAC..... Physical Oceanography Distributed Active Archive Center archives and distributes data relevant to the physical state of the oceans. The PO.DAAC is part of EOSDIS, the information system for NASA's Earth Observing System (EOS) project.

Q-R

Resource Site ..... The third tier of the MEL made up of resource site databases, extraction and delivery processes.

RoI ..... Region of Interest

S

SDBF ..... Simulator Data Base Facility is a data repository of simulator data bases with the primary function of the transfer of data base investments between U.S. Government organizations and programs.

SGML..... Standard Generalized Markup Language is an international standard metalanguage which defines rules for encoding a document enabling further operations to be performed on that document. SGML started out as GML which was created by Charles Goldfarb, Edward Mosher, and Raymond Lorrie of IBM in 1969. It became an international standard (ISO 8879) in 1986.

STIP..... Scientific and Technical Information Program is the Defense Technical Information Center (DTIC) umbrella under which all scientific and technical information programs within DoD components operate. This interchange is within and among DoD components and their contractors, federal agencies and their contractors, and the national and international scientific community, within established release controls.

T

TAR..... A UNIX archive file format.

TEC ..... Topographic Engineering Center is one of four laboratories of the U.S. Army Corps of Engineers (see USACE.) The traditional mission of TEC has been to provide America's soldiers and their commanders with superior knowledge of the battlefield and to apply relevant technology to solve civil problems of the nation.

TMPO..... Terrain Modeling Project Office was established to manage and coordinate all of DoD's activities related to its role as the Executive Agent for Terrain (EA (Terrain)), as designated by USD (A&T) (see OUSD(A&T)) under the authority of DODD 5000.59, "DoD Modeling and Simulation Management".

TOWAN..... Tactical Oceanography Wide Area Network is an environmental data repository and server which allows DoD personnel and their contractors to search for and retrieve oceanographic information using an interactive GUI.

U

URL ..... Universal Resource Locator is an address specifying the location of information on the World Wide Web (WWW.)

US Army..... United States Army.

US Marine Corps .... United States Marine Corps.

US Navy..... United States Navy.

USACE..... United States Army Corps of Engineers provides comprehensive engineering, management and technical support to the Department of Defense, other agencies, State and Local governments.

USAF ..... United States Air Force.

V

VPF..... Vector Product Format is point and vector object information using the terminology and concepts from Department of Defense, 1992, Vector Product Format (MIL-STD-600006).

W

WAM..... WAve Model is the third generation wave model currently implemented at Fleet Numerical Meteorology and Oceanography Center (see FNMOC) and is run on a global one degree spherical grid with 15 degree angular resolution for the directional spectra, using a 20 minute propagation term time step. Surface wind stress fields generated by the Navy Operational Global Atmospheric Prediction System (NOGAPS) provide the unique ocean-atmosphere coupling.

Web Browser ..... A Graphical User Interface (GUI) that allows access to information and data bases stored on computers world-wide and made available through the World Wide Web (WWW). Examples of Web Browsers include Internet Explorer, Mosaic, and Netscape Navigator.

WMO..... World Meteorological Organization is a specialized agency of the United Nations, located in Geneva, Switzerland, which has the purpose to facilitate international cooperation in the establishment of networks for making meteorological, hydrological, and other observations and to promote the rapid exchange of meteorological information, the standardization of meteorological observations, and the uniform publication of observations and statistics.

WWW..... World Wide Web is the interconnection of many independent computers world-wide which provides access to information and data bases through the Internet. The WWW is usually accessed through a Web Browser.

X-Y-Z